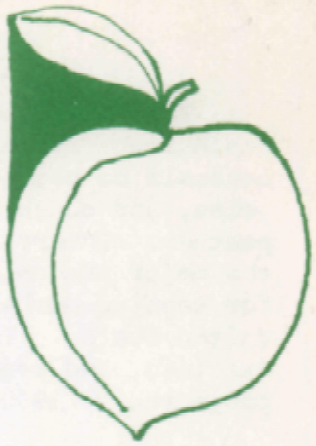

U.S. PEACH INDUSTRY

PART I.

STRUCTURE, TRENDS, AND CONSUMPTION PROJECTIONS TO 1980

U.S. Department of Agriculture

Agricultural Research Service and Economic Research Service

Agricultural Economic Report No. 200

ABSTRACT

This first report of a two-part study dealing with the economics of the peach industry examines the industry's geographic structure, with special emphasis on peaches for canning. Recent trends in production, utilization, price, and consumption are analyzed for both fresh- and processing-market peaches. Interrelationships between fresh- and processing-market prices in the major producing States are investigated, and supply-price relationships for canning-market peaches are developed for each producing region and the United States. The changing pattern of consumer demand for peach products is examined, and regional consumption requirements for canned peach products are projected to 1980.

Key Words: Peaches, Canning, Processing, Fresh Market, Supply, Demand, Utilization, Nation, North Atlantic Region, South, North Central Region, West.

PREFACE

There is much interest in the development of agricultural resources to provide expanded employment opportunities in rural areas. Effective development of such resources can help reverse the rural-to-urban migration of recent years and perhaps relieve some of the population pressures on our large metropolitan centers.

This report is part of a continuing program of the U.S. Department of Agriculture (USDA) to define and appraise the feasibility of rural development opportunities in various regions. It was conducted under a cooperative research program between the Richard B. Russell Agricultural Research Center, Agricultural Research Service, Athens, Ga., and the Economic Research Service, USDA, Washington, D.C.

The report is part I of a two-part study dealing with the economics of the peach industry, with emphasis on peaches for canning. Part I examines the geographic structure of the peach industry and analyzes recent trends in production, utilization, prices, and consumption of peaches for both the fresh and processing markets. Part I provides the basic structural framework for the interregional competitive model of the peach canning industry that will be developed in part II. This model is designed to determine the regional production and trade patterns that would minimize total costs of producing, processing, transporting, and distributing the total national pack of canned peaches under various assumed competitive situations.

Results of the study will provide economic guidelines for research and development efforts directed at expanded production and processing of peaches, especially in the South.

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DEFINITIONS

The key terms used in this report are defined as follows:

All canned peaches - Canned peaches plus peaches canned in fruit salad.

Canned peaches - Canned peach halves, slices, mixed pieces, and spiced peaches.

North Atlantic Region - Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.

North Central Region - Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.

Peaches canned in fruit salad - Peaches canned in fruit cocktail, canned in fruits for salad, and canned in mixed fruits.

Production of peaches - As used in this report, sales of peaches at the farm level. Farm sales differ from actual production by the amount of economic abandonment, excess cullage, and home use.

Southern Region - Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

Western Region - Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

SUMMARY

Future demand for all canned peaches--canned plus canned in fruit salad--looks favorable, assuming a continuation of 1950-68's rising consumption trends for these products plus growth in population as projected. By 1980, U.S. consumption of all canned peaches should reach 1,857.7 million pounds (fresh weight)--43 percent more than in 1968.

Per capita consumption of fresh and dried peaches shows a declining trend, and at a rate greater than the increase for the canned products. Thus, per capita consumption of all peaches is trending downward.

By 1980, per capita consumption of all peaches is projected to be 12.1 pounds (fresh weight)--down from the 1968 average of 13.8 pounds. Gains are projected for canned peaches (6.4 pounds vs. 5.4 in 1968), peaches canned in fruit salad (1.3 pounds vs. 1.1 in 1968), and frozen peaches (.51 pound vs. .36 in 1968). But more than offsetting are the projected losses for fresh peaches (down to 4.1 pounds by 1980, from 6.7 in 1968) and the dried fruit (zero in 1980 vs. .21 pound in 1968).

Western per capita consumption of canned peaches is 17 percent above the U.S. average. The North Central Region's consumption is 15 percent above. On the other hand, in the South and the North Atlantic Region, canned peach consumption is 7 and 18 percent below the U.S. average.

Most of 1966-68's peach production--85 percent--went to the domestic demand component discussed above. Exports took 7 percent and Government purchases, 2 percent.

As the demand figures would indicate, the amount of peaches used for the fresh market has dropped--from 49 percent of production in 1959 to 39 percent in 1968. The share of production used for canning has increased, from 45 to 55 percent, while the amount used for other processed forms has remained steady at around 5 percent.

Total U.S. production for fresh use and processing (canning, freezing, and drying) averaged 3.2 billion pounds a year during 1959-68. California, South Carolina, and Georgia led, with 60 percent, 10 percent, and 6 percent.

The South leads in production of peaches for the fresh market, supplying 50 percent during 1959-68. The West grows nearly all peaches for processing--93 percent in the 10-year period. However, there is growing interest in developing an expanded processing market for peaches in the South.

The U.S. season average price of peaches (for both the fresh and the processing markets) rose from 3.97 cents a pound in 1959 to 5.44 cents in 1968. This price is closely related to the joint simultaneous configuration of the production volume and the wholesale price index. Fresh-market prices have been highly variable, rising sharply when supplies have been short. Prices paid for peaches to be processed historically have been below fresh-market prices. Nevertheless, prices paid by processors have shown a general rise since 1959 and have not fluctuated as widely from year to year as fresh-market prices have.

U.S. PEACH INDUSTRY: PART I. STRUCTURE, TRENDS, AND CONSUMPTION PROJECTIONS TO 1980

By Yvonne Davies and Warren Trotter 1/

INTRODUCTION

Peaches are one of the oldest known and most versatile fruits. In popularity with the American consumer they rank among the top--along with oranges, apples, and bananas. Their versatility is demonstrated by the fact that they are available in fresh, canned, frozen, dried, pickled, spiced, and pureed forms and can be used for salads, baking, preserves, wine, brandies, ice cream, and a variety of other food and beverage preparations. The single most important use of peaches today is canning.

Canned peaches are the most important canned fruit in the United States, as shown in the following tabulation on packs of the five leading canned fruits:

	U.S. pack, 1968 Mil. cases*
Peaches	35.9
Clingstone	29.9
Freestone	6.0
Fruit cocktail	16.6
Pineapple	16.5
Applesauce	14.1
Pears	10.3

*In terms of 24 #2-1/2 cans.
Source: (45). (Underscored numbers in parentheses refer to items in References, p. 38).

The next most important canned fruit is fruit cocktail, and FDA Standards of Identity for fruit cocktail require that not less than 30 percent and not more than 50 percent be peaches.

From 1959 to 1968, the share of the peach crop used for canning increased from around 45 percent to about 55 percent. The portion of the crop used for fresh consumption declined from around 49 percent to 39 percent. These same trends are reflected in per capita consumption of peach products.

1/ Economist and Economic Research Service Liaison Economist, respectively, Richard B. Russell Agricultural Research Center, Agricultural Research Service, USDA, Athens, Ga.

The West is by far the leading region in production of peaches for canning, and in recent years has canned over 90 percent of the total peach pack. California dominates in this region. The South is second in importance, but its share of the total national pack has remained relatively small. The volume of peaches processed in the North Atlantic and North Central Regions has declined in recent years. 2/

The South produces the major share of peaches used for fresh consumption, and the industry there historically has been geared to this market outlet. Orchards are planted to varieties developed especially for fresh-market use. The processing market has assumed importance in the region only during years of large supplies and depressed prices. However, increased costs of producing and marketing fresh peaches, changing consumer demand for peaches and peach products, and instability in the fresh market are contributing to growing interest among all segments of the industry in developing an expanded processing market.

PURPOSE AND SCOPE OF STUDY

Economic considerations over the long run dictate where peach production can best take place. Future locational developments in the peach-processing industry will thus depend on the comparative economic advantage of different regions in producing peaches and processing them into canned and other forms. It is important that those involved in directing research on peaches and peach products as well as producers and processors interested in expansion opportunities be cognizant of the economic considerations that dictate longrun feasibility of investment in peach-processing facilities.

The basic purpose of the two-part study is to quantify economic considerations that influence interregional competition in canning peaches. Specific objectives of the study are:

1. To determine trends and structural characteristics of the supply of, and demand for, fresh peaches, canned peaches, and other peach products in major producing and consuming regions;

2. To determine the competitive position of the major peach-canning regions;

3. To project the regional production and distribution patterns that would minimize total costs of producing, processing, transporting, and distributing the total national pack of canned peaches under various assumed competitive conditions; and

4. To provide economic guidelines for future growth of the industry.

2/ See p. 8 for description and basis for selection of regions.

Part I, presented here, examines the geographic structure of the peach industry and analyzes recent trends in production, utilization, prices, and consumption of both fresh- and processing-market peaches. Interrelationships between fresh-market and processing-market prices in the major producing States are analyzed, and supply response functions for canning-market peaches are developed for each producing region and the United States. The changing pattern of consumer demand for peach products is examined, and regional consumption patterns for canned peach products are projected to 1980.

Part I provides the basic structural framework for the interregional competitive model of the peach canning industry developed in part II. This model is designed to determine the regional production and trade patterns that would minimize total costs of producing, processing, transporting, and distributing the total national pack of canned peaches. In part II, measurements will be made of each region's present and potential competitive position as it is affected by changes in technology, transportation costs, supply and demand elasticities, population growth, per capita incomes, and other factors.

CHARACTERISTICS OF SUPPLY

Production Trends

Total U.S. production of peaches for the fresh market and processing during 1959-68 averaged 3.2 billion pounds a year (table 1 and fig. 1). 3/ Except in 1967, production nationally was relatively stable, varying between 3.1 and 3.5 billion pounds a year. A supply shortage occurred in 1967 and total production amounted to only 2.5 billion pounds.

Since 1959, total farm value of the U.S. peach crop has shown a substantial upward trend, from a low of $129.0 million in 1962 to a high of $183.9 million in 1968. For the 10-year period, total farm value increased 37.1 percent.

All of this increase in value can be attributed to the rather substantial increase in the season average price received by producers during the period. Price rose from 3.97 cents a pound in 1959 to 5.44 cents in 1968--a 37.0 percent increase.

3/ Production figures used in this report refer to sales of peaches at the farm level. Farm sales may differ from actual production by: (1) the amount of home use, (2) economic abandonment (mature fruit left on trees during periods of depressed prices), and (3) excess cullage of harvested fruit during certain seasons (farm sales allow for a "normal" rate of cullage during packing and processing). Home use during 1959-68 averaged 50 million pounds a year. Economic abandonment and excess cullage averaged 193 million pounds a year. These amounts are excluded from the yearly production figures used in this report. See app. table 1 for a detailed breakdown.

Table 1.--Volume and value of U.S. peach production, 1959-68

Year	Production	Season average price	Total value
	Mil. lb.	Cents/lb.	1,000 dollars
1959	3,379.5	3.97	134,166
1960	3,389.8	3.84	130,168
1961	3,496.4	3.95	138,108
1962	3,333.9	3.87	129,022
1963	3,372.1	4.35	146,686
1964	3,235.1	4.59	148,491
1965	3,128.8	4.54	142,048
1966	3,168.7	5.27	166,990
1967	2,493.3	6.36	158,574
1968	3,381.3	5.44	183,943

Sources: (25) (26) (36) (40).

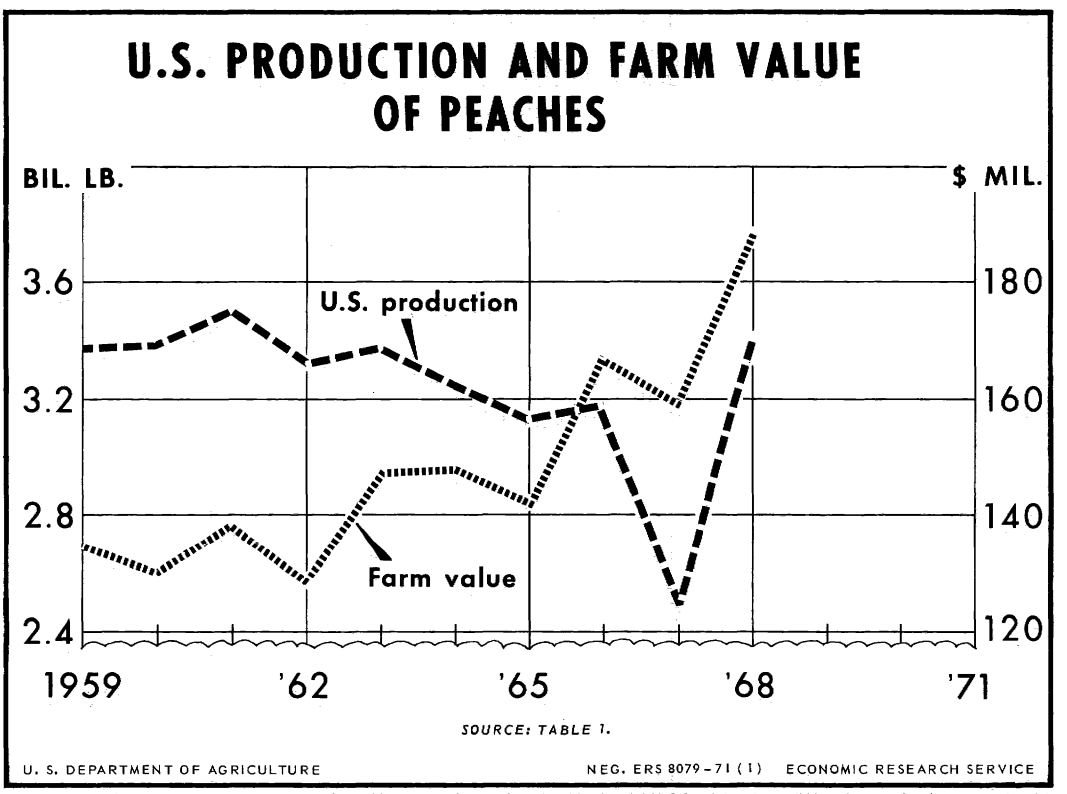


Figure 1

Leading States

Generally, peach growing is restricted to relatively mild climates, since the buds and wood are susceptible to winter injury. Peaches are widely grown in the United States, with commercial production in about 35 States.

California is the leading peach-producing State, accounting for at least 60 percent of the U.S. total. South Carolina and Georgia follow with 10 percent and 6 percent, respectively. Production by State for the last 3 crop years is shown in table 2.

Table 2.--Peach production in 10 leading States, 1966-68

State	1966	1967	1968	1966-68 average and percentage of U.S. total	
	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Percent
California	2,022.2	1,628.2	2,032.6	1,894.3	62.8
South Carolina	333.8	168.4	395.0	299.1	9.9
Georgia	169.5	141.1	229.5	180.0	6.0
New Jersey	69.1	49.4	99.5	72.7	2.4
Pennsylvania	60.5	37.0	104.2	67.2	2.2
North Carolina	75.7	39.1	76.3	63.7	2.1
Michigan	47.5	67.5	33.5	49.5	1.6
Arkansas	46.8	49.4	34.1	43.4	1.4
Washington	58.3	40.1	26.4	41.6	1.4
Virginia	31.2	23.5	49.3	34.7	1.2
Other States	254.1	249.6	300.9	268.2	8.9
U.S. total	3,168.7	2,493.3	3,381.3	3,014.4	100.0

Sources: (36) (40).

During 1950-68, California's share of U.S. peach production ranged from a low of 46 percent in 1958 to a high of 69 percent in 1964 (fig. 2). South Carolina's share of the total dropped sharply in 1950, 1955, 1964, and 1967--all bad crop years due to weather factors. Georgia, like South Carolina, had a low percentage of the U.S. total in 1950, 1955, and 1964.

Yields Per Acre

Bearing acreage and yields of peaches per acre in major producing States for 1967 and 1968 are shown in table 3. Yields in 1967 were low for all States. Yields for 1968 appear more representative, except in Michigan, where they were low both years. California's yields averaged nearly twice those of other principal producing States.

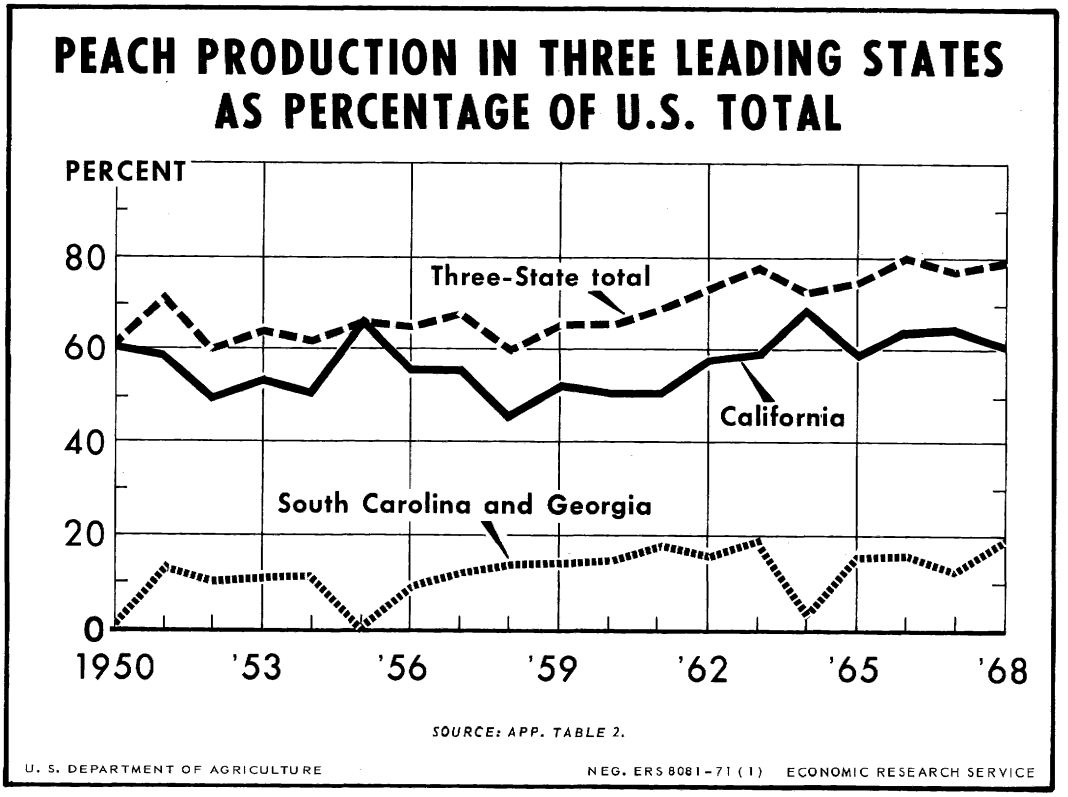


Figure 2

Table 3.--Peach acreage, production, and production per bearing acre, selected States, 1967-68

State	Bearing acres		Production		Production per bearing acre	
	1967	1968	1967	1968	1967	1968
	Acres	Acres	Tons	Tons	Tons	Tons
California	86,980	86,770	814,100	1,016,300	9.36	11.71
Clingstone	61,830	63,110	608,900	767,200	9.85	12.16
Freestone	25,150	23,660	205,200	249,100	8.16	10.53
South Carolina	33,400	30,100	84,200	197,500	2.52	6.55
Georgia	25,067	23,000	70,550	114,750	2.81	4.99
New Jersey	9,720	11,317	24,700	49,750	2.54	4.40
Pennsylvania 1/	8,273	9,269	18,500	52,100	2.24	5.62
Michigan	13,100	13,200	33,750	16,750	2.58	1.27

1/ Estimates of Pennsylvania bearing acreage are based on reported number of trees of bearing age divided by 90 trees per acre for both years.

Sources: Calif., (5) (40); S.C. and Ga., Crop Reporting Boards and (40); N.J. and Pa., (18) (40); Mich., (17) (40).

Higher yields in California may be attributed to the more favorable growing conditions there. Production is concentrated in the highly fertile upper San Joaquin and lower Sacramento Valleys, where weather conditions and availability of irrigation permit production of peaches under essentially "controlled" conditions. Other producing areas are more vulnerable to heavy rain, drought, disease, insect pests, and severe freezes during the growing season. For example, 1967's low yields in Georgia and South Carolina were caused by a hard freeze in March of that year. The freeze caused serious damage, cutting South Carolina's crop to about half the yearly average. Georgia's crop was affected also, but to a lesser extent.

A second factor is differences in tree density per acre. Available estimates indicate tree density in California of around 108 trees an acre (4), 4/ compared with 100 in the Southern States (11) and 90 in the Northern States (18). Also, trees in California have a longer productive life, with fewer trees being replaced each year. According to available estimates, peach trees in California have a productive life of around 16 years (3), compared with 10 years in South Carolina 5/ and 7 years in Georgia (11).

Peach Types

The hundreds of known peach varieties are classified as either clingstone or freestone. In freestone varieties, the fruit can be easily separated from the stone or pit. In clingstones, as implied by the name, the flesh adheres tightly to the pit. Both types have yellow-fleshed and white-fleshed varieties. The yellow-fleshed varieties are most common and are generally preferred for both processing and fresh market uses. Clingstones are usually considered to have a less desirable flavor than freestones (19). However, clingstones are firmer, smoother, and hold their shape well. For this reason, processors prefer clingstones for canning. In 1968, only 17 percent of the U.S. pack was freestone, and use of these varieties for canning is declining. Freestones averaged 25 percent of the total canned pack during 1959-63, compared with only 17 percent during 1964-68 (table 4). Of the freestone peaches used for canning, the Elberta-type varieties are the most important.

California produces nearly all clingstone peaches plus a substantial volume of freestone peaches. Most peaches produced in the East are freestone. However, several Eastern States have shown increasing interest in producing clingstone peaches for processing, and several new clingstone varieties have been introduced. Rutgers University, Michigan State University, Virginia Polytechnic Institute, and Clemson University each have recently introduced new clingstone varieties adapted to the area and developed especially for processing.

4/ Underscored numbers in parentheses refer to items in References, p. 38.

5/ Estimated by G. R. von Tungeln, J. S. Lytle, and J. F. Pittman, Clemson University, and submitted to the South Carolina State Marketing Commission.

Table 4.--U.S. pack of canned peaches, by type, 1959-68

Year	Clingstone pack		Freestone pack	
	1,000 cases 1/	Percent	1,000 cases 1/	Percent
1959	21,485	73	7,816	27
1960	21,587	72	8,449	28
1961	22,940	75	7,751	25
1962	25,574	79	6,917	21
1963	25,089	77	7,640	23
1964	30,640	82	6,611	18
1965	23,233	79	6,159	21
1966	30,348	84	5,846	16
1967	22,566	86	3,783	14
1968	29,867	83	5,988	17

1/ In terms of 24 #2-1/2 cans.

Sources: (12) (24) (45) (13).

Seasonality of Production

Fresh peaches are available in the United States from early May to October. The California harvesting season is the longest, beginning around May 10 and lasting through the first week of October (fig. 3). Nationwide, the earliest harvesting of peaches occurs between May 10 and June 10, with three States in addition to California starting their harvesting during this period--South Carolina, Georgia, and North Carolina. Other Southern States begin harvesting later in June. New Jersey, Pennsylvania, and Michigan do not start harvesting until July, and their season ends by early October. Harvesting is nearly complete in Georgia and Arkansas by the time it begins in these Northern States.

The period of time when most orchards in nine of the major producing States come into full bloom is shown in figure 3, along with the periods for harvesting, marketing, and canning. As the figure shows, the major share of the California crop is marketed during July and August; most Southern peaches are marketed during June and July. Most canning occurs in each area during the height of the marketing season.

Production by Region

To facilitate the examination of regional trends in peach production, utilization, and consumption the United States was divided into four geographical regions that coincide with the classification of conterminous States as defined by the 1960 Census of Population (fig. 4). These regions were chosen

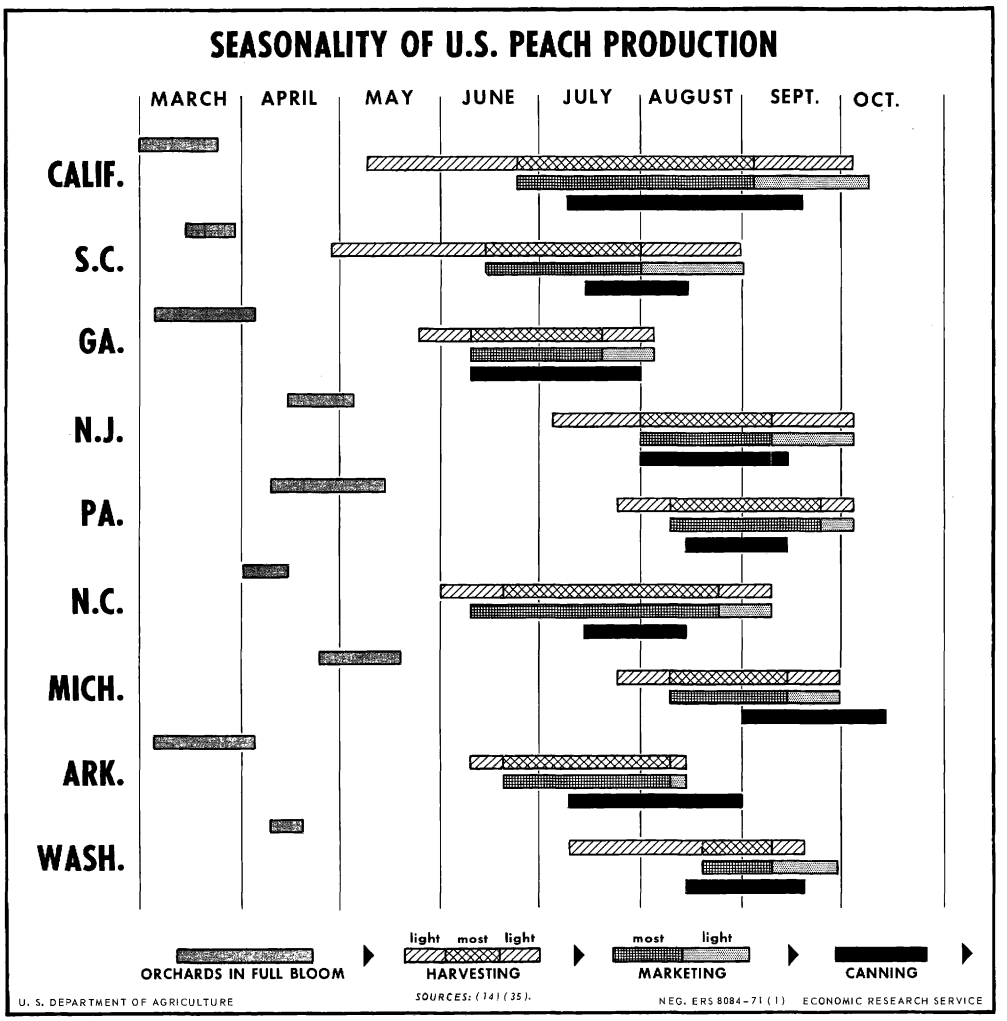


Figure 3

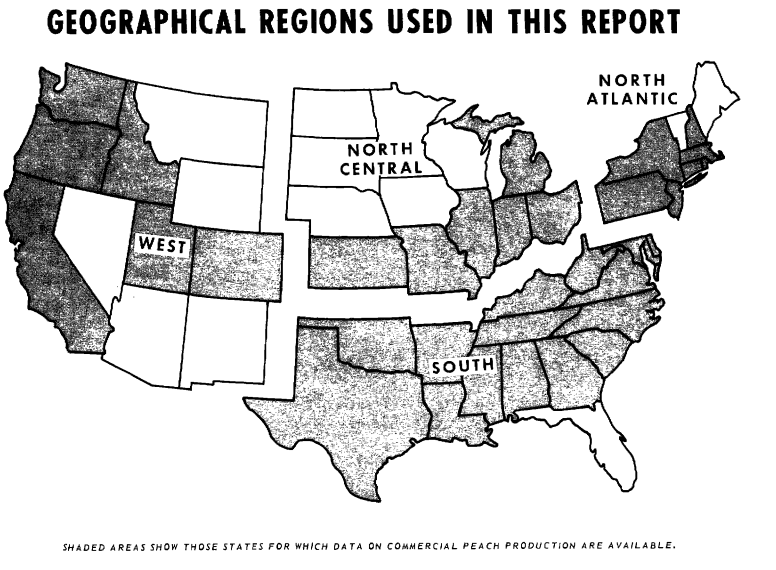


Figure 4

on the basis of availability of data on production, consumption, population, and prices. The North Atlantic Region consists of the New England and Middle Atlantic States. The East North Central and West North Central States comprise the North Central Region. The Southern Region consists of the South Atlantic and South Central States. The Western Region consists of the Mountain and Pacific Coast States.

Within each region, one or two States account for the major share of peach production. Pennsylvania and New Jersey predominate in the North Atlantic Region. Michigan accounts for the major share of production in the North Central Region. In the Southern Region it is South Carolina and Georgia. California dominates peach production in the Western Region.

The South is the leading region in production of fresh-market peaches, accounting for an average of 50 percent of U.S. production during 1959-68 (table 5). This percentage varied from a low of 31 percent in 1964 (a bad crop year in the South) to 59 percent in 1968. The Western and North Atlantic Regions accounted for an average of 23 percent and 16 percent, respectively, of the 1959-68 fresh-market total. The North Central Region, primarily Michigan, accounted for an average of 11 percent of the fresh-market supply during the same period.

Table 5.--Regional production of peaches for the fresh market as percentage of U.S. total, 1959-68

Crop year	U.S. production for fresh market	Producing regions			
		South	West	North Atlantic	North Central
	Million pounds	Percent			
1959	1,653.4	46.0	24.5	15.8	13.6
1960	1,682.2	47.5	20.8	17.3	14.3
1961	1,725.6	51.5	21.3	12.9	14.2
1962	1,475.1	48.6	25.6	16.9	8.9
1963	1,408.6	58.6	20.1	15.0	6.2
1964	1,110.0	31.0	30.8	21.7	16.6
1965	1,311.7	49.6	21.8	17.5	11.1
1966	1,196.7	56.4	23.0	13.0	7.5
1967	934.8	56.0	22.1	9.7	12.1
1968	1,324.7	58.9	18.2	16.5	6.5
1959-68 average	1,382.3	50.4	22.8	15.6	11.1

Sources: (25) (26) (36) (40).

Production of peaches for processing is heavily dominated by the West, which produced an average of 93 percent of total U.S. production of such peaches during 1959-68 (table 6). The South is next in importance but produces a rather small share of the total. This share ranged from 1 percent in 1964 to 8 percent in 1968 and averaged 5 percent during 1959-68.

Table 6.--Regional production of peaches for processing as percentage of U.S. total, 1959-68

Crop year	U.S. production for processing 1/	Producing regions		
		West	South	North Atlantic and North Central
	Million pounds	Percent		
1959	1,726.1	92.0	3.9	4.2
1960	1,707.6	89.7	6.3	4.0
1961	1,770.8	90.9	5.8	3.3
1962	1,858.8	93.0	5.0	2.0
1963	1,963.5	91.5	6.8	1.7
1964	2,125.1	96.2	1.4	2.4
1965	1,817.1	90.1	7.6	2.3
1966	1,972.0	93.6	5.3	1.1
1967	1,558.5	96.4	2.4	1.2
1968	2,056.6	91.2	7.9	0.9
1959-68 average	1,855.6	92.5	5.2	2.3

1/ Includes canning, freezing, drying and other processing.

Sources: (25) (26) (36) (40).

Utilization

Peaches can be eaten fresh, canned, frozen, dried, pickled, spiced. In addition, they can be used to make jams, preserves, and brandy. And now other processed peach products are being developed. These include clear peach juice, clear peach concentrate (used in making peach wine), puree (used as a base for peach drinks), refrigerated peach slices, partially dehydrated pasteurized peaches, and instant peach flakes (used in ice cream, cakes, dry mixes, and peach drinks). A continuing research effort is directed toward improving existing peach products and developing new ones that better satisfy changing consumer demands.

Detailed data on the amount of peaches allocated to each use are not available. However, data are available for the major uses, including fresh consumption, canning, freezing, and drying. A substantial part of the frozen pack is used for further processing into such products as preserves and ice cream.

Comparison of Utilization for Fresh and Canning Markets

Utilization of peaches for canning has increased in recent years (table 7). From 1959 through 1968, the average annual distribution of peach sales was 52.3 percent for canning, 42.5 percent for fresh, and 5.3 percent for drying, freezing, or other processing. Today, then, the processing market exceeds the fresh market.

Table 7.--Utilization of U.S. peach production for fresh market, canning, and other processing uses, 1959-68

Crop year	Fresh market		Canning market		Other processing uses 1/	
	Mil. lb.	Percent	Mil. lb.	Percent	Mil. lb.	Percent
1959	1,653.4	48.9	1,526.9	45.2	199.2	5.9
1960	1,682.2	49.6	1,528.3	45.1	179.3	5.3
1961	1,725.6	49.4	1,614.4	46.2	156.4	4.5
1962	1,475.1	44.2	1,687.3	50.6	171.5	5.1
1963	1,408.6	41.8	1,784.4	52.9	179.1	5.3
1964	1,110.0	34.3	1,939.6	60.0	185.5	5.7
1965	1,311.7	41.9	1,648.2	52.7	168.9	5.4
1966	1,196.7	37.8	1,828.8	57.7	143.2	4.5
1967	934.8	37.5	1,413.4	56.7	145.1	5.8
1968	1,324.7	39.2	1,874.6	55.4	182.0	5.4
1959-68 average	1,382.3	42.5	1,684.6	52.3	171.0	5.3

1/ App. table 3 provides more detailed data on other processing uses.

Sources: (25) (26) (36) (40).

Figure 5 shows the declining amount of peaches used for the U.S. fresh market. The market for canned peaches had grown to about 55 percent of the total supply of peaches by 1968. The trend line labeled "other processing uses" includes frozen, dried, and unspecified uses. Use of frozen peaches has remained at roughly 3 percent of production since 1959, while use of dried peaches has declined steadily, accounting for only about 1 percent of production in 1968.

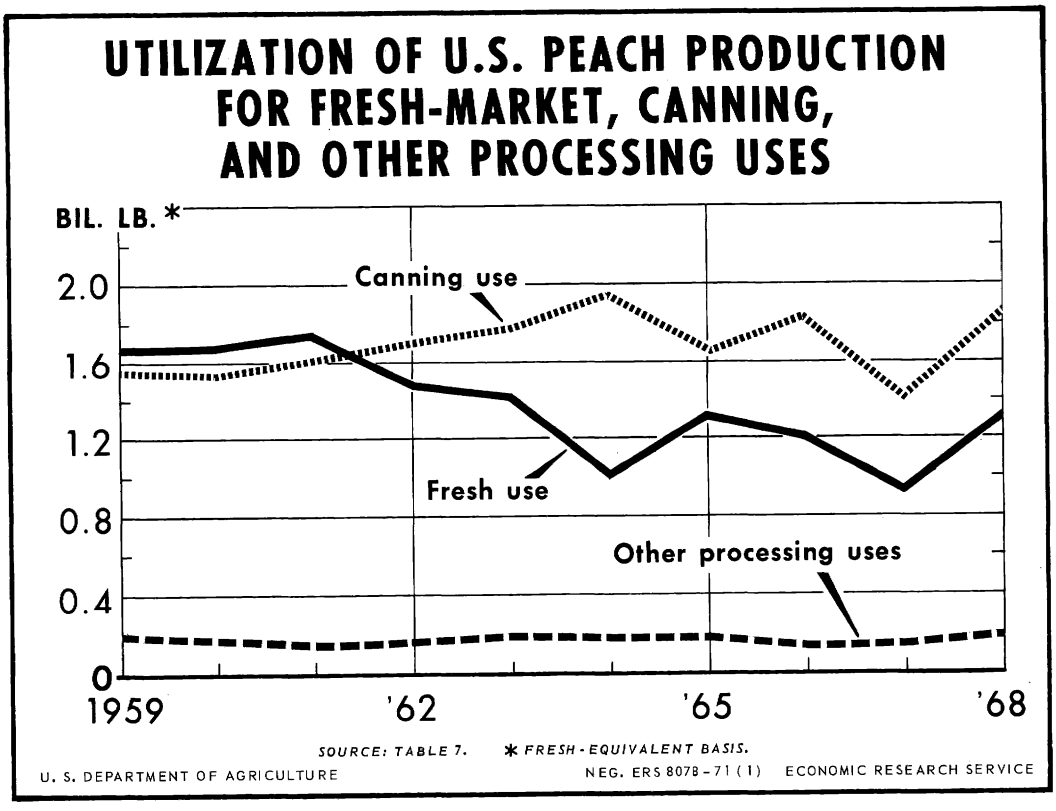


Figure 5

Utilization by Region

Utilization of peaches differs widely among the different producing regions. For instance, 78 percent of the Western Region's peach crop was used for canning in 1959-68, while the fresh market received 15 percent (fig. 6 and app. table 3). In the Southern Region, 88 percent of the peach crop went to the fresh market during 1959-68. However, peaches for canning have shown a gradual increase in importance, rising to about 14 percent of Southern peach sales in 1968, compared with 6 percent in 1959.

In the North Atlantic, fresh-market sales represented 93 percent of total sales for 1959-68. Sales of peaches for canning averaged 5 percent. Utilization in the North Central Region was similar to that in the North Atlantic Region during that same period, with fresh sales averaging 87 percent of all sales and sales for canning, 10 percent.

Utilization by State

Utilization of production may differ markedly from one State to another. Figure 7 illustrates the difference among five States: California, South Carolina, Georgia, Pennsylvania, and Michigan. Both South Carolina and Georgia (which lie within the same geographical region) show rather wide year-to-year variation in the proportion of the peach crop used for processing. However, Georgia on the average has a somewhat higher percentage than South Carolina.

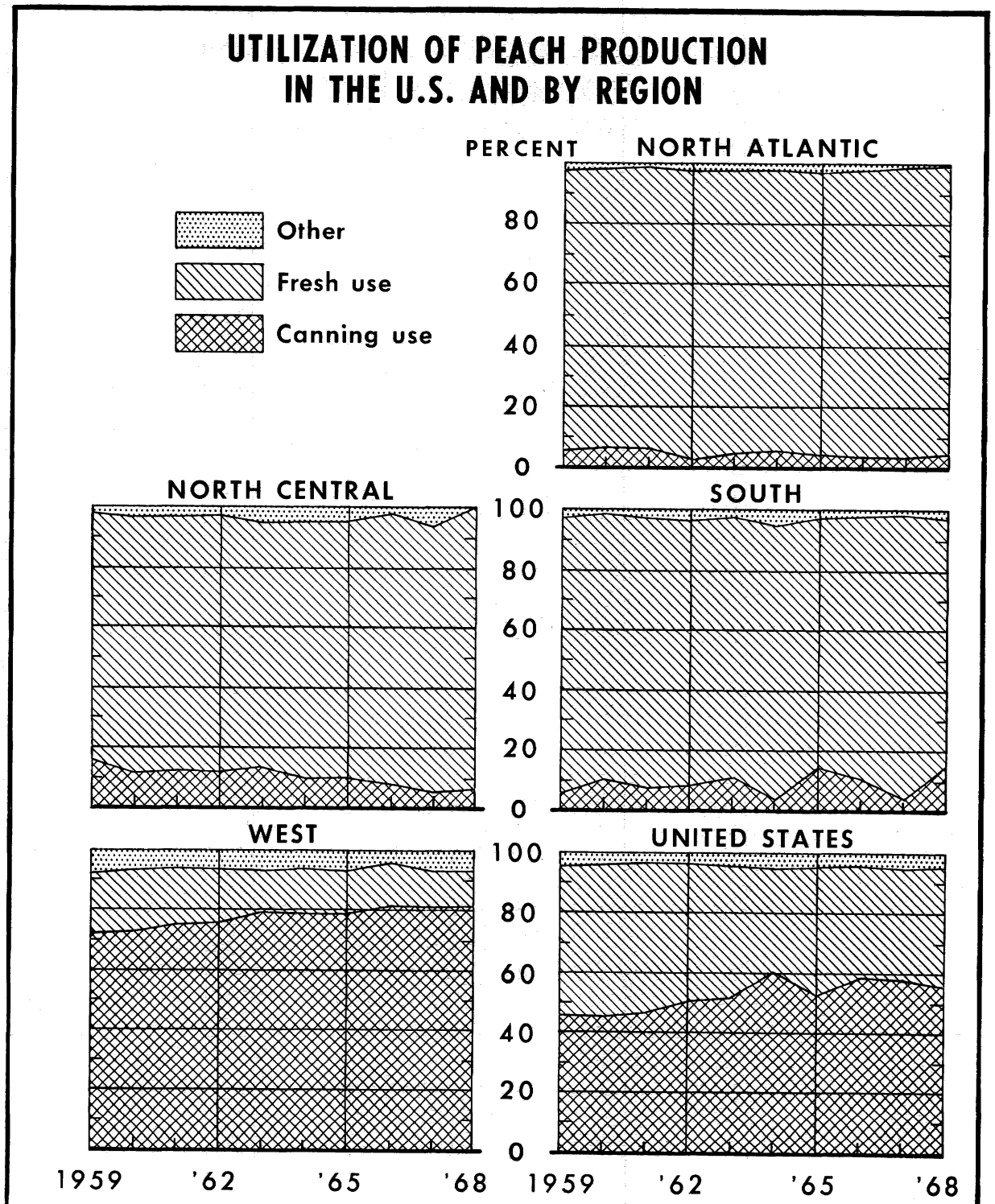

UTILIZATION OF PEACH PRODUCTION
IN THE U.S. AND BY REGION
PERCENT
NORTH ATLANTIC
Other
Fresh use
Canning use
80
60
40
20
0
NORTH CENTRAL
SOUTH
100
80
60
40
20
0
WEST
UNITED STATES
100
80
60
40
20
0
1959
'62
'65
'68
1959
'62
'65
'68
SOURCE: APP. TABLE 3.
U. S. DEPARTMENT OF AGRICULTURE
NEG. ERS 8072-71 (1) ECONOMIC RESEARCH SERVICE

Figure 6

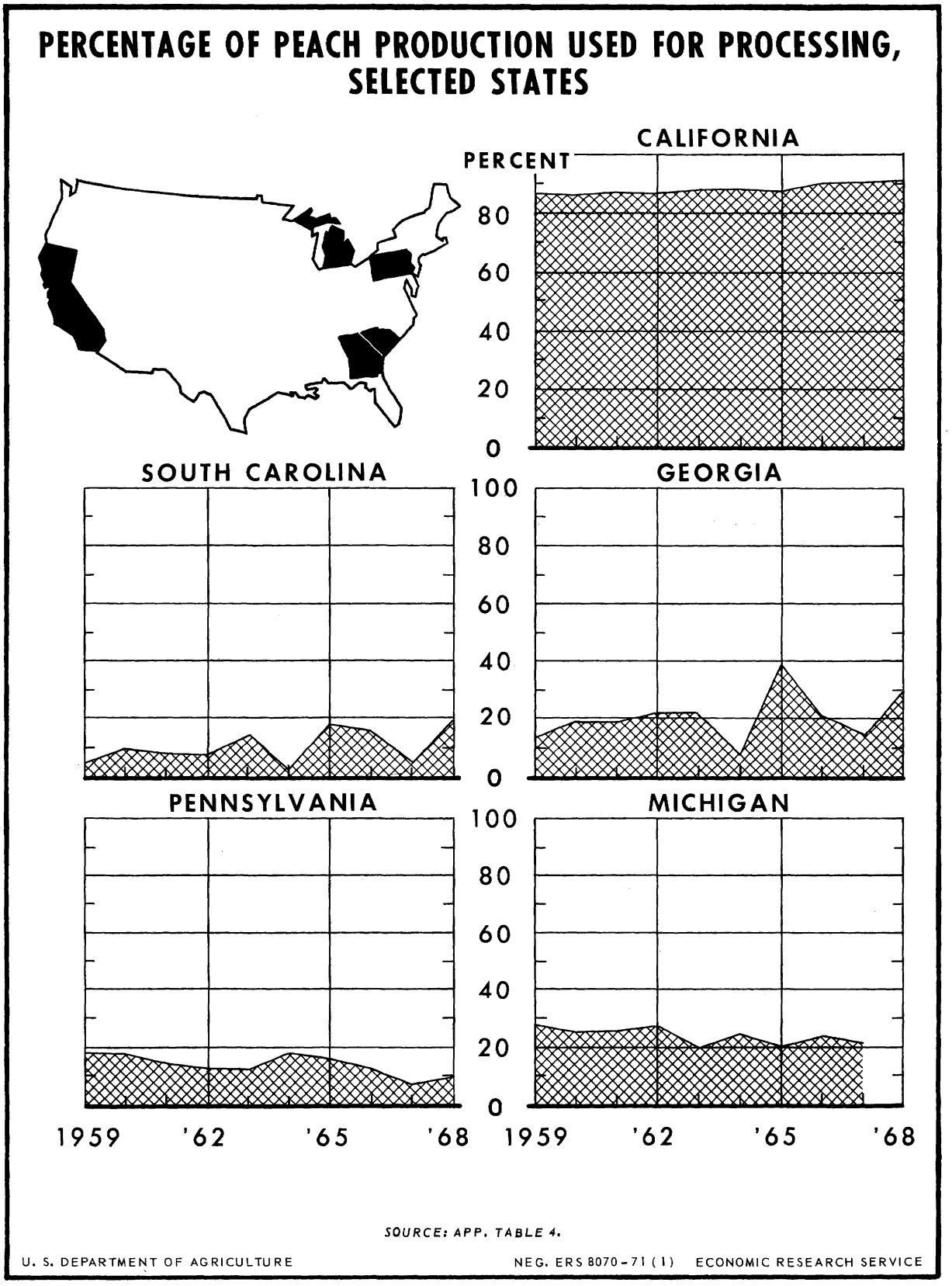

PERCENTAGE OF PEACH PRODUCTION USED FOR PROCESSING, SELECTED STATES
CALIFORNIA
PERCENT
80
60
40
20
0
SOUTH CAROLINA
GEORGIA
100
80
60
40
20
0
PENNSYLVANIA
MICHIGAN
100
80
60
40
20
0
1959
'62
'65
'68
1959
'62
'65
'68
SOURCE: APP. TABLE 4.
U. S. DEPARTMENT OF AGRICULTURE
NEG. ERS 8070-71 (1) ECONOMIC RESEARCH SERVICE

Figure 7

California, South Carolina, and Georgia show a slightly upward trend in the percentage of production going to processing. The trend in Pennsylvania and Michigan appears to be downward.

Although New Jersey is also a ranking State in peach production, peaches grown there go mainly to the fresh market. The New Jersey Crop Reporting Service reports that some fruit is taken by one or two out-of-State processors, but these quantities cannot be published without disclosing information on individual operations.

Additional data on differences among States as to quantity of peaches used for the fresh and processing markets are in appendix table 4.

Price Structure and Trends

From 1959 through 1968, prices of peaches (both fresh-market and processing) on a national basis rose sharply in relation to prices of all farm products (fig. 8).

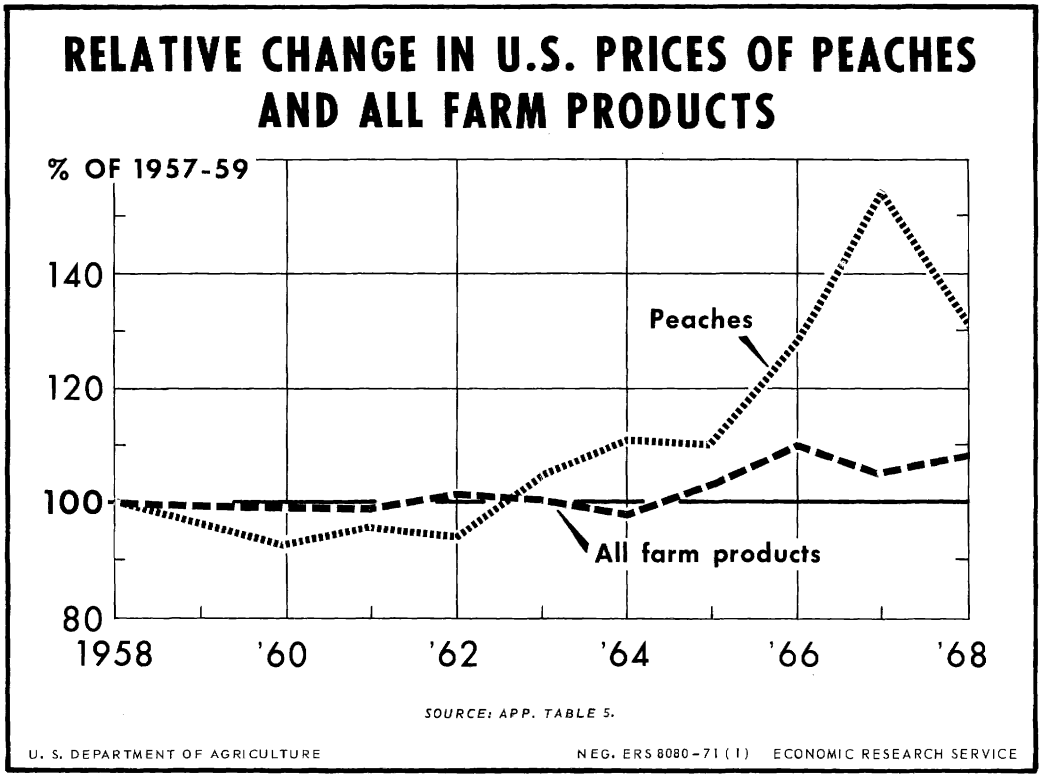


Figure 8

Prices received by growers for all peaches vary greatly among different production areas (fig. 9). California prices have shown little year-to-year variation since 1959, staying almost 1 cent a pound below the U.S. average price, while prices received in Southern States such as South Carolina and Georgia have deviated as much as 5 cents a pound above the U.S. average. The

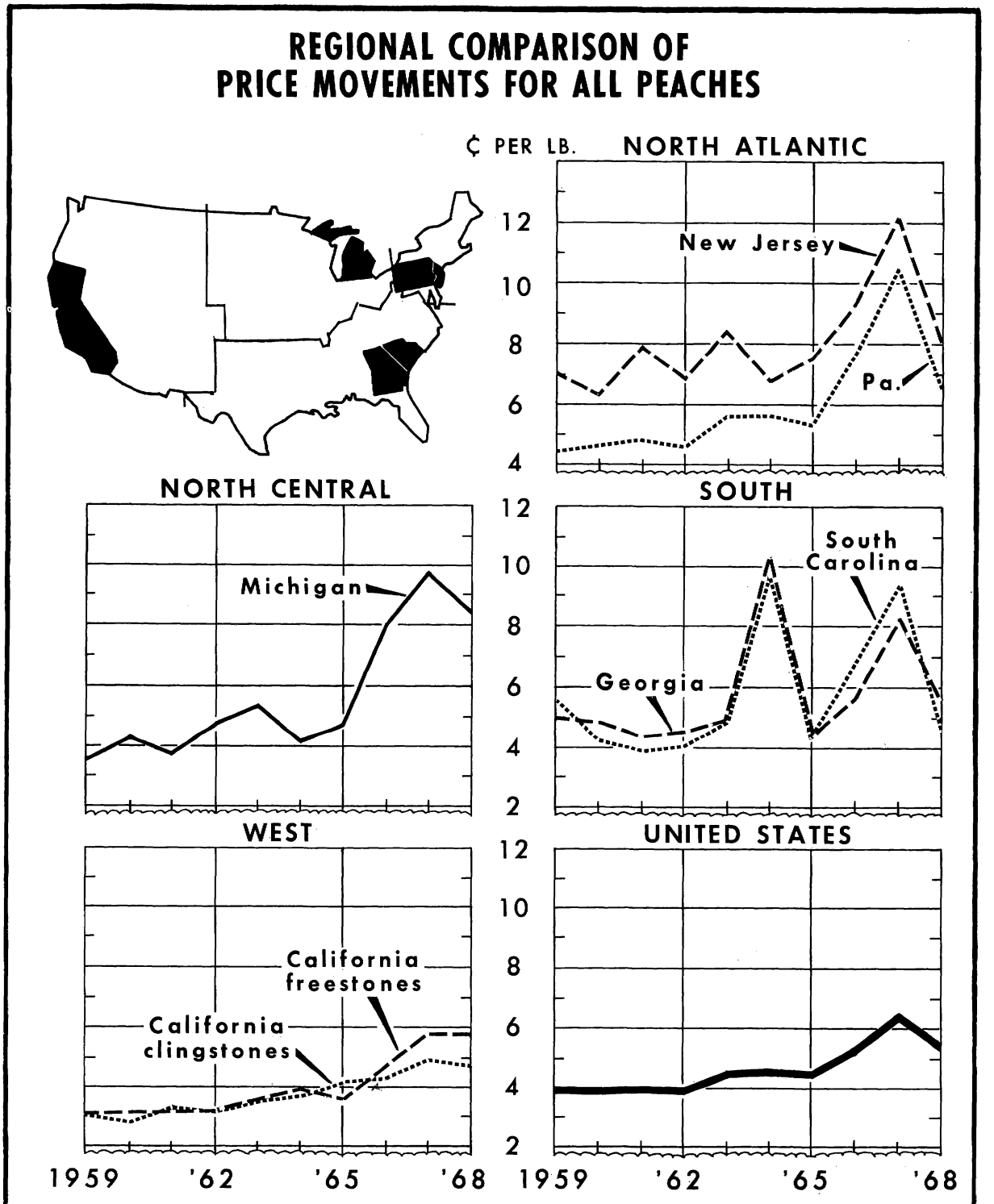

REGIONAL COMPARISON OF
PRICE MOVEMENTS FOR ALL PEACHES
¢ PER LB.
NORTH ATLANTIC
New Jersey
Pa.
NORTH CENTRAL
Michigan
SOUTH
South Carolina
Georgia
WEST
California freestones
California clingstones
UNITED STATES
12
10
8
6
4
2
1959
'62
'65
'68
SOURCE: APP. TABLE 6.
U. S. DEPARTMENT OF AGRICULTURE
NEG. ERS 8071-71 (1) ECONOMIC RESEARCH SERVICE

Figure 9

sharp price rise in the Southern States in 1964 and 1967 can be attributed to low production which resulted from the late spring freeze in the area during those years. Within the Southern Region, there appears to have been somewhat greater variation in prices received by South Carolina growers than in prices received by Georgia growers.

Prices received by growers in Pennsylvania, New Jersey, and Michigan have followed a general pattern of being consistently above the U.S. average and rising to a peak in 1967.

Regression and correlation analysis was used to study the relationship between season average price received by growers for all peaches and peach production volume for the period 1959-68. To take care of the rising level of prices over time, the wholesale price index was included as a second independent variable.

Results indicated a close relationship between season average price and the joint simultaneous configuration of the production volume and the price index (table 8). For the United States, 94 percent of the variation in the dependent variable (season average price) could be associated with variations in the two independent variables (production volume and the price index). An increase of 1 million pounds in U.S. peach production was associated with a 0.00153 cent per pound reduction in price. Also, each percentage point increase in the wholesale price index was associated with an increase of 0.16362 cent a pound in season average price of peaches.

Table 8.--Regression and correlation analysis of season average price of peaches, peach production volume, and wholesale price index, United States and selected States, 1959-68 1/

Area	Constant a	Coefficient b	Coefficient c	Coefficient of multiple determination	Standard error of estimate
United States	- 7.21712	-.00153	+.16362	.93563	.20049
California:					
Clingstone	-14.76204	+.00078	+.17050	.72387	.35023
Freestone	-16.54038	-.00362	+.22033	.87599	.33199
South Carolina	-15.23402	-.01784	+.25535	.82314	.85642
Georgia	- 0.26119	-.02894	+.11043	.66422	1.04167
Pennsylvania	- 5.00154	-.04835	+.15382	.93497	.44628
New Jersey	+ 4.51686	-.05430	+.08767	.87456	.57022
Michigan	-43.53391	-.01176	+.49137	.85803	.77082

1/ Equation for the regression line is of the form $Y = a + bX_1 + cX_2$ where Y = peach season average price in cents per pound, X_1 = peach production volume (farm sales) in millions of pounds, and X_2 = wholesale price index.

In all cases except California clingstones, there was a negative relationship between production volume and season average price. Thus, in years of short peach crops (which historically have resulted from weather damage), the available supply of peaches is sharply reduced and the shortrun supply curve shifts to the left, raising the equilibrium market price of peaches. In years of large peach crops, the supply curve shifts to the right and the market price is bid down. The rightward shift in the supply curve could be induced by favorable growing conditions (good weather), which would increase each seller's supply. Favorable weather conditions have much the same effect on the supply curve in the short run as improved production techniques have over a longer term.

The positive relationship between production volume and price for California cling peaches may be influenced by actions taken under that State's marketing order for canning and freezing cling peaches. This marketing order's influence on prices is considered further in the section on supply-price relationships for canning-market peaches (p. 21).

Fresh-Market Prices

Peach prices can be further analyzed by examining trends in season average prices of both peaches for the fresh market and peaches for processing and the relative movements over time of these two price series. Figure 10 depicts movements of these two price series for the 10-year period 1959-68 in selected States. Fresh-market prices have been highly variable, rising sharply whenever there has been a short supply. For example, in 1964, when production in Georgia was short, fresh peaches there averaged 10.8 cents a pound. Season average prices the previous 5 years had ranged from 4.9 to 5.6 cents a pound. Year-to-year variation in fresh market prices appears to have been less in California than in other major producing States.

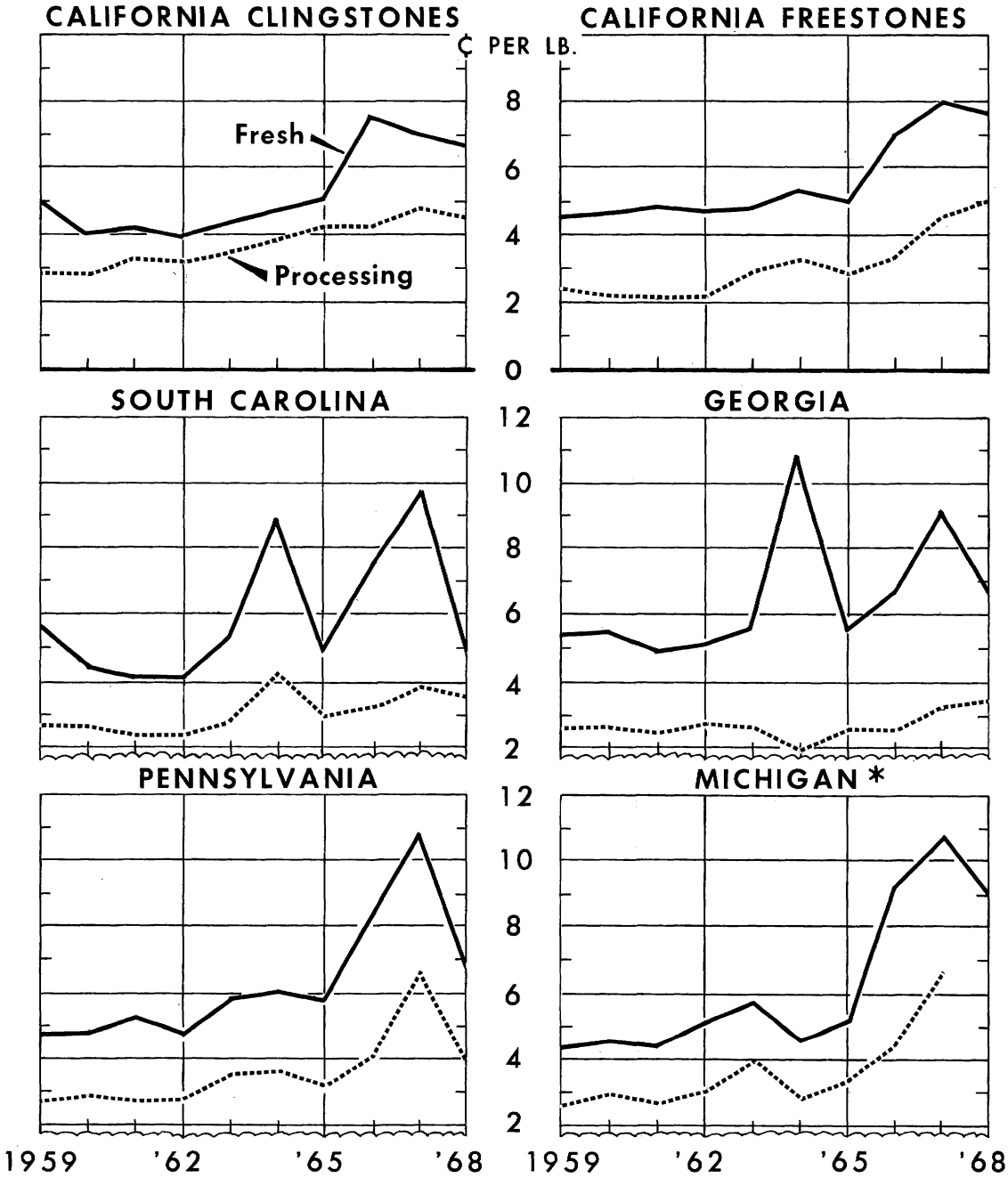
Processing-Market Prices

Season average prices paid for peaches to be processed have historically been below fresh-market prices; nevertheless, prices paid by processors for both clingstones and freestones have shown a general rise since 1959. Processing prices have not shown as wide year-to-year fluctuation as fresh prices have (fig. 10). Processing prices for clingstones during 1959-68 averaged about $14.40 a ton above processing prices for freestones (app. table 8). This results from two factors: (1) Cling peaches are generally considered to be more suited to processing than freestones are, and (2) the California marketing order on cling peaches influences price by deliberately controlling production volume.

Comparison of Fresh- and Processing-Market Prices

Figure 10 shows a close relationship between fresh-market and processing-market prices for peaches. Swings in the two price series generally move in

COMPARISON OF PRICE MOVEMENTS FOR PEACHES, FOR FRESH MARKET AND PROCESSING, SELECTED STATES



SOURCE: APP.. TABLES 7 AND 8. * *1968 DATA NOT PUBLISHED TO AVOID DISCLOSING INDIVIDUAL OPERATIONS.*

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Figure 10

concert, although year-to-year fluctuations in processing-market prices are not as great as in fresh-market prices.

The magnitude of the difference in fresh- and processing-market prices is shown in table 9 for the 10-year period. Additional costs incurred by the grower in producing peaches for the fresh market largely explain the divergence between fresh- and processing-market prices. Labor costs in harvesting are higher since more care is required with fruit for the fresh market. In addition, there are special marketing costs peculiar to the fresh market. Peaches to be sold fresh must be graded, packed, hydrocooled, and refrigerated. Also included in the marketing costs are hauling and cartage fees (to the packing house) and commission and handling charges.

Table 9.--Differential in price received by growers for peaches for the fresh market and peaches for processing, selected States, 1959-68 average

State	Fresh price less processing price	
	Cents per pound	Dollars per bushel
California:		
Clingstone	+1.50	+0.72
Freestone	+2.53	+1.21
South Carolina	+3.04	+1.46
Georgia	+3.91	+1.88
Pennsylvania	+2.68	+1.29
Michigan	+2.65	+1.27

Sources: (27) (41).

Supply-Price Relationships for Canning-Market Peaches

Regression and correlation analysis was used to study the relationship between production of all peaches for canning (both freestones and clingstones) and three influencing variables. These variables are (1) season average price paid to growers for canning-market peaches, (2) season average price paid to growers for fresh-market peaches, and (3) the carryover of canned peaches from the previous year. Equations for regression lines were obtained for the United States and for each major producing region (table 10).

In all areas except the North Central Region, there was a positive relationship between supply available for canning and prices paid to growers by the canner. This indicates that growers are willing to supply more peaches to the canner as prices paid to growers rise. For example, regression analysis shows that each $1 per ton increase in the price offered by canners increases total U.S. production for the canner by 5,776 tons.

Table 10.--Multiple regression and correlation analysis of peach production volume for canning, season average price paid for peaches for canning, season average price of peaches for fresh market, and U.S. carryover of canned peaches, United States and regions, 1959-68 1/

Area	Constant a	Coefficient b	Coefficient c	Coefficient d	Coefficient of multiple determination	Standard error of estimate
United States	+1,056,794.9	+5,776.4	-2,827.5	-32.2	.48619	56,760.5
Western Region	+1,053,363.0	+6,808.2	-3,158.5	-44.0	.48206	58,314.4
Southern Region	+ 25,305.6	+1,101.6	- 369.3	- .2	.70877	9,874.9
North Atlantic Region	+ 15,832.2	+ 51.1	- 80.7	- .4	.67204	1,565.1
North Central Region	+ 28,252.1	- 36.1	- 72.6	- .8	.63923	3,089.3

1/ Equation for the regression line is of the form $Y = a + bX_1 + cX_2 + dX_3$ where Y = production of peaches for canning in tons, X_1 = season average price paid for peaches for canning in dollars per ton, X_2 = season average price paid for fresh market peaches in dollars per ton, and X_3 = U.S. canned peach carryover from previous year in thousands of actual cases.

At the same time, the production of peaches allocated for canning was inversely related to fresh-market prices and canned peach carryover in all regions and in the United States. Thus, when fresh-market prices are high, growers apparently are less willing to sell to canners and prefer selling to the fresh market--if that alternative exists. For freestone growers, the alternative of selling to either the canning or the fresh market usually exists. Thus, canners must offer prices that compete with anticipated fresh-market prices in contracting for their supplies at the beginning of each season. This, together with variable production, contributes to a lack of continuity in the supply of freestone peaches available for canning--particularly in the Southern Region, where the fresh market is of such major importance.

In contrast, the fresh-market option for clingstone growers is practically nonexistent, and clingstones make up the major share of the Western Region's canning-market supply. Thus, it is illogical to assume that any seasonal allocation to canning through the price mechanism occurs in the Western Region. The positive relationship between production for canning and season average price in this region probably results more from actions taken under California's cling peach marketing order than from any allocation to canning through the price mechanism. The marketing order provides for deliberate control of production volume so as to maintain prices in line with increasing production costs and at the same time allow for sufficient supply to satisfy rising demand for canned peaches (6).

The principal mechanism for supply control provided for in the marketing order is the green-drop program. Under this program, immature fruit is removed from trees when prospective supply and demand conditions appear to warrant such action. Table 11 shows the quantity removed under the green-drop program since 1959. The marketing order also provides for the removal of bearing trees from production and for the diversion of harvested fruit by the canner, when conditions warrant, to aid in maintaining profitable prices.

CHARACTERISTICS OF DEMAND

Components of Demand

This report concentrates on one important component of demand for peaches--domestic consumption. Nevertheless, there are other components of demand that deserve brief comment.

Demand for peaches consists of domestic consumption, exports, and Government purchases. Domestic consumption of peaches represents about 85 percent of all farm sales (fig. 11 and app. table 9). Next in importance are exports, which averaged 7 percent of sales from 1966 through 1968. Government purchases account for 2 percent, and the remaining 6 percent is attributed to changes in yearend carryover and statistical discrepancy.

Table 11.--California production of clingstone peaches, 1959-68

Crop year	Production including green drop	Quantity green dropped	Actual production 1/	Production (farm sales) 2/
	Million pounds			
1959	1,450.0	232.0	1,218.0	1,112.8
1960	1,360.0	136.0	1,224.0	1,124.8
1961	1,412.0	80.0	1,332.0	1,189.8
1962	1,586.0	116.0	1,470.0	1,308.0
1963	1,614.0	146.0	1,468.0	1,374.4
1964	1,874.0	134.0	1,740.0	1,586.0
1965	1,520.0	62.0	1,458.0	1,279.4
1966	1,678.0	0.0	1,678.0	1,507.8
1967	1,376.0	0.0	1,376.0	1,217.8
1968	1,708.0	0.0	1,708.0	1,534.4

1/ Actual production = production including green drop less quantity green dropped.

2/ Production (farm sales) differs from actual production by the amount of economic abandonment, excess cullage, and home use.

Sources: Bureau of Agricultural Statistics (Federal-State Crop Reporting Service), Sacramento, Calif.; and (25) (26) (36) (40).

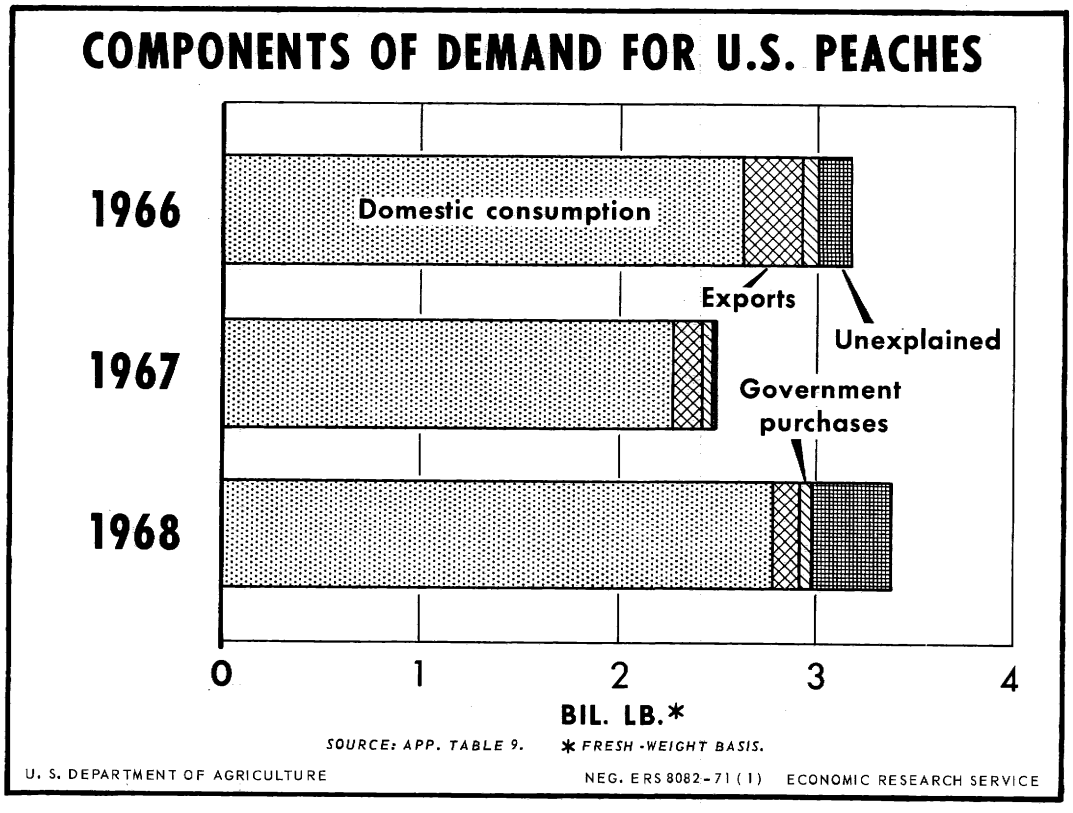

Figure 11

According to USDA's Foreign Agricultural Trade of the United States (39), the leading U.S. canned fruit exports are fruit cocktail and canned peaches. Table 12 shows 1959-68 exports of these canned peach products as well as other peach forms. Relatively light domestic supplies and accompanying high prices cut 1967's export volume almost in half. Another important factor was increased competition of Southern Hemisphere countries in traditional U.S. export markets, especially in Western Europe. Competition by South Africa, Australia, and Taiwan has eroded the U.S. export market for canned fruit. And the increasing production in these areas will make it difficult for the United States to regain its former position. Although increased supplies and lower prices contributed to gains in peach exports in 1968 over 1967, export volume was still almost 40 percent below the levels of the early 1960's.

Table 12.--U.S. exports of peaches, 1959-68

Item	Year beginning July			
	1959-65 average	1966	1967	1968
	1,000 pounds 1/			
Fresh peaches	32,573	26,813	26,432	38,115
Canned peaches	217,994	229,094	88,861	114,887
Canned in fruit salad	50,363	61,157	37,903	44,792
Dried	1,201	1,260	702	2/
Dried in fruit salad	1,433	1,142	1,057	2/
Total in terms of fresh peaches 3/	284,365	296,019	148,974	176,967
Index	100	104	52	62

1/ Product weight.
2/ Not available.
3/ Assuming 1 lb. fresh peaches is approximately equal to 1.15 lbs. canned and 7 lbs. fresh go into 1 lb. dried.

Sources: (43) (46).

Canned peaches have been one of the most important canned fruits to be purchased by the Government. These purchases have gone to the Veterans Administration, the National School Lunch Program, and the military. Of these, the military has received the bulk of the purchases (table 13).

Table 13.--Government purchases of canned peach products, United States, 1966-68

Canned peach product and year beginning July	Military	National School Lunch	Veterans Administration	Total 1/
	1,000 pounds 2/			
Canned peaches:				
1966	45,333	22,606	1,504	69,443
1967	26,461	22,123	2,974	51,558
1968	29,776	21,831	2,936	54,543
Canned in fruit cocktail:				
1966	8,154	-	291	8,445
1967	11,514	-	658	12,171
1968	9,253	-	186	9,438
All canned peach products:				
1966	53,487	22,606	1,795	77,888
1967	37,975	22,123	3,632	63,729
1968	39,029	21,831	3,122	63,981

1/ Detail may not add to total because of rounding.
2/ Fresh-equivalent basis.

Sources: (13) (14).

Domestic Consumption

Per Capita Consumption

U.S. per capita consumption of peaches follows closely per capita peach production (fig. 12). In the bad crop years of 1950, 1955, 1964, and 1967, the resulting sharp declines in production were reflected by a fall in per capita consumption. The difference between per capita peach production and per capita consumption is attributed to exports, Government purchases, changes in yearend carryover, and statistical discrepancy.

During the years of low production, consumption of fresh peaches was affected more than consumption of canned, dried, or frozen peaches (fig. 13). Consumption of processed products remained relatively steady even during years of low peach production. This was probably because processed peaches can be stocked and carried over from one year to another, while fresh fruits are perishable.

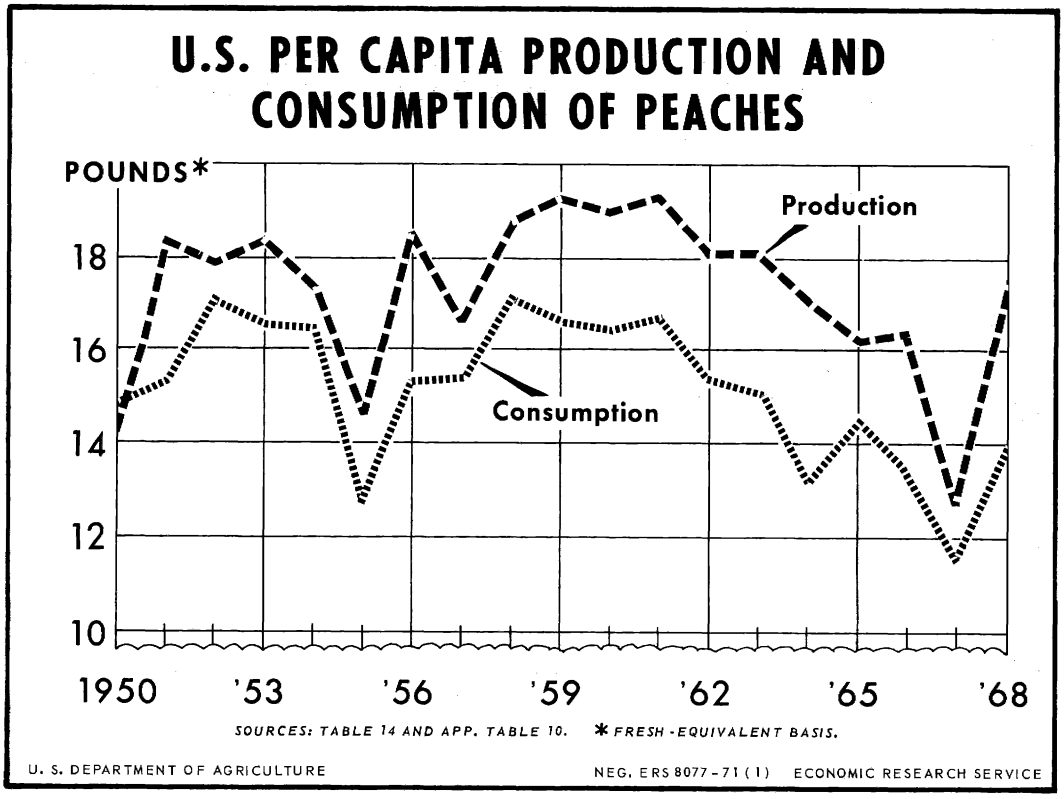

Figure 12

In 1968, U.S. per capita peach consumption was 13.8 pounds, fresh-weight basis (table 14). The components were 6.7 pounds fresh, 5.4 pounds canned, 1.1 pounds canned in fruit salad, .36 frozen, and .21 dried. Wide fluctuations in per capita peach consumption, ranging from a high of 17.1 pounds in 1958 and 1952 to a low of 11.6 pounds in 1967, are apparent from data in table 14. Most of this variation is due to the fresh component.

Trends in Consumption

Demand for fruits and vegetables has been shifting gradually from the fresh to the processed form. Since 1950, consumption of fresh fruit has declined more than consumption of canned and frozen fruit has expanded -- so that per capita fruit consumption has declined. Declines in consumption of fresh and dried fruits have accounted for the overall decline in consumption.

These consumption trends usually vary from one fruit to another; however, peach consumption compares quite closely to fruit consumption in general. That is, per capita consumption of all peach forms has shown a downward trend, especially since 1961 (fig. 13). This decline results from decreases in consumption of dried and fresh peaches. On the other hand, per capita consumption of canned peaches is rising because of increasing use of canned peach halves and peach slices as well as peaches mixed in fruit salad. This increasing trend in per capita consumption of canned peaches and peaches canned in fruit salad coupled with a growth in population makes the future demand for all canned peaches look favorable.


U.S. PER CAPITA CONSUMPTION OF PEACHES
POUNDS*
18
16
14
12
10
8
6
4
2
0
All peaches
Fresh
Canned
Dried
Canned in fruit salad
Frozen
1950
'55
'60
'65
'70
SOURCE: TABLE 14.
* FRESH-EQUIVALENT BASIS.
U. S. DEPARTMENT OF AGRICULTURE
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Figure 13

Table 14.--U.S. per capita consumption of peaches, 1950-68

Year	Fresh	Canned 1/	Canned in fruit salad 2/	Frozen	Dried	Total
	Pounds 3/					
1950	7.8	5.2	.9	.20	.76	14.9
1951	9.4	4.2	.7	.20	.83	15.3
1952	10.8	4.5	.9	.25	.69	17.1
1953	10.3	4.6	.7	.28	.69	16.6
1954	10.0	4.9	.7	.21	.69	16.5
1955	6.1	4.8	.9	.33	.62	12.8
1956	9.0	4.6	.9	.29	.49	15.3
1957	8.6	5.1	.9	.30	.49	15.4
1958	10.5	5.1	.9	.18	.42	17.1
1959	9.7	5.2	1.0	.28	.49	16.7
1960	9.5	5.3	1.0	.30	.42	16.5
1961	9.7	5.4	1.0	.34	.35	16.8
1962	8.1	5.5	1.0	.38	.42	15.4
1963	7.6	5.7	1.0	.40	.35	15.1
1964	6.0	5.7	.9	.30	.28	13.2
1965	6.9	5.8	1.0	.40	.35	14.5
1966	6.3	5.4	1.1	.38	.28	13.5
1967	4.8	5.2	1.0	.38	.21	11.6
1968	6.7	5.4	1.1	.36	.21	13.8

1/ Canned peaches include canned halves, slices, mixed pieces, and spiced peaches.

2/ Canned in fruit salad includes peaches canned in fruit cocktail, canned in fruits for salad, and canned in mixed fruits.

3/ Fresh-equivalent basis.

Sources: (34) (44).

U.S. Consumption Projections

To project future demand for peaches for U.S. domestic civilian consumption needs, a continuation of recent trends was assumed. This projection was computed by fitting a straight line to U.S. per capita consumption values from 1950 through 1968 for fresh, canned, canned in fruit salad, frozen, and dried peaches.

Forecasting by a trend line is based on the hypothesis that future happenings will follow the same path as in the past. In any long-term projection, the period of years to be included is important and should be so selected that it covers good years as well as bad years; the period 1950-68 meets this criterion. An attempt was made to use the period 1959-68 (the years for which

data were given earlier in this report in the supply analysis). However, the occurrence of 5 good years in the first half of that period and a bad year at the end of that period biased the consumption data. The period 1950-68 was chosen because the bad years (years of low production volume that resulted in low consumption) were better distributed throughout the period.

The following simple regression model was used to estimate the annual trend: $Y = a + bX$ where Y = per capita consumption in fresh equivalent pounds and X = time. For all equations, X = 0 at 1959. Table 15 summarizes the findings.

Table 15.--Linear trend for U.S. per capita consumption of peaches, 1950-68 1/

Item	Constant a	Coefficient b	Coefficient of determination R^2	Standard error of estimate
Fresh peaches	8.30526	-.20018	.40205	1.33711
All canned peaches	6.06316	+.07684	.66460	.29899
Canned	5.13684	+.06035	.59585	.27223
Canned in fruit salad	.92632	+.01649	.60355	.07320
Frozen peaches	.30316	+.01002	.62850	.04218
Dried peaches	.47579	-.03235	.93202	.04785
All peach forms	15.16316	-.14404	.25930	1.33335

1/ For all equations, 1959 = 0, X-unit = 1 year.

The trend line that was derived to fit the fresh peach consumption data (fig. 14) is represented by the equation $Y = 8.30526 - 0.20018X$ where 1959 is the base year. This negatively sloped line reflects the declining importance of the fresh market for peaches. The trend lines for canned peach products (fig. 15) all slope upward, reflecting the increasing importance of the canned market. Overall, the increasing trend in consumption of all canned peaches as well as frozen peaches is offset by a decreasing trend in consumption of fresh and dried peaches, so that consumption of all peach forms is declining. See figures 14-17 for a graphical interpretation.

The foregoing equations based on the secular trend of per capita peach consumption were used to project U.S. per capita consumption needs for 1970-80 in each of the five product lines. Table 16 presents these projections.

Regional Consumption Projections

Since this study is primarily concerned with the canned-peach market, regional consumption forecasts focus on canning needs.

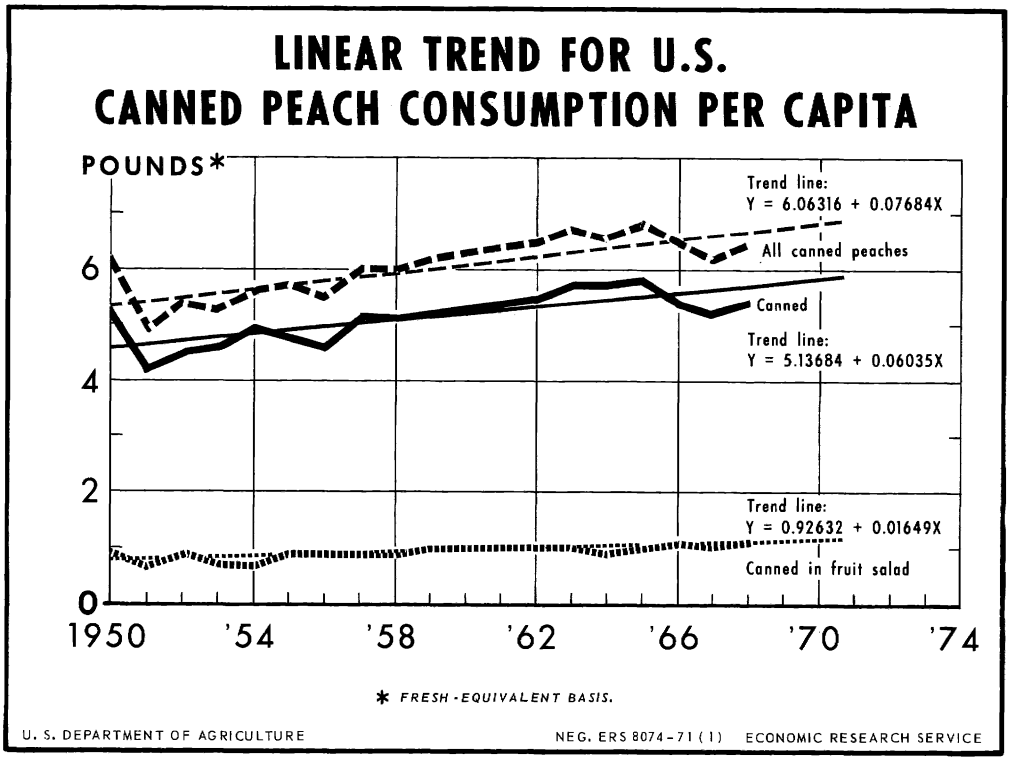

Figure 14

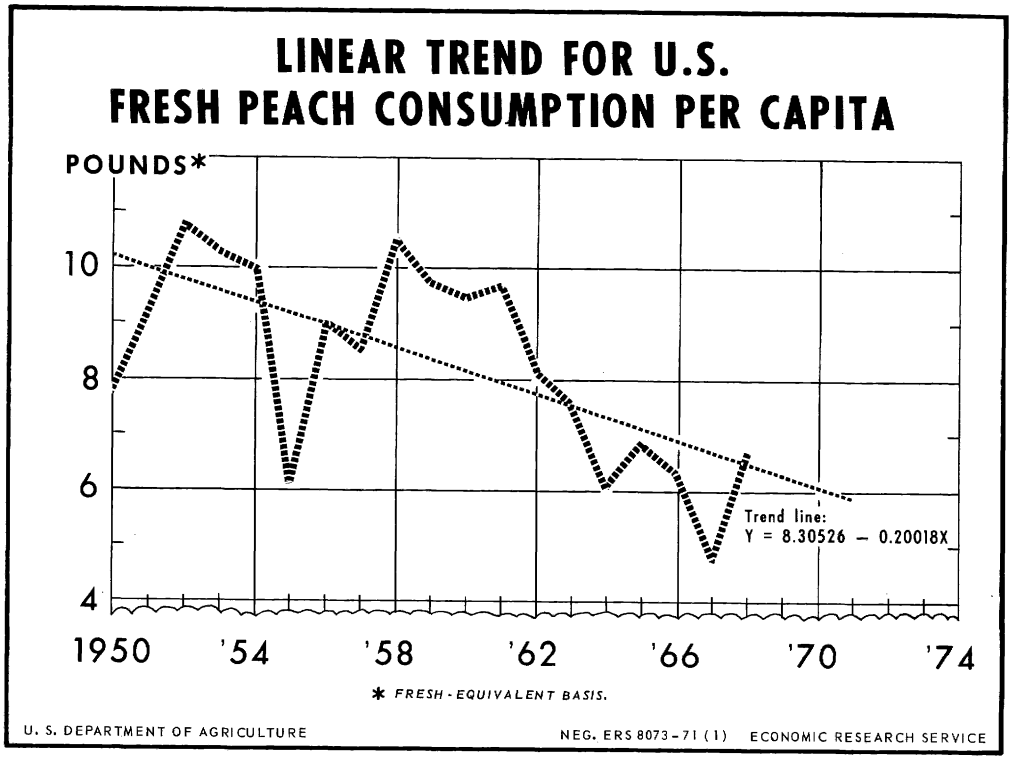

Figure 15

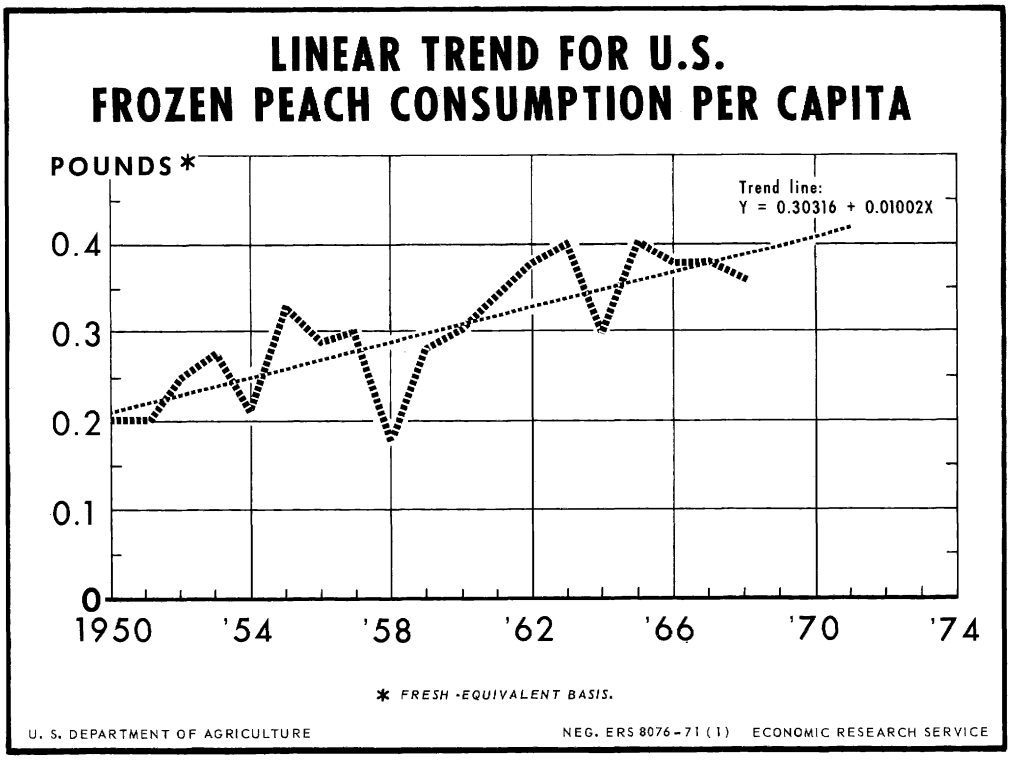

Figure 16

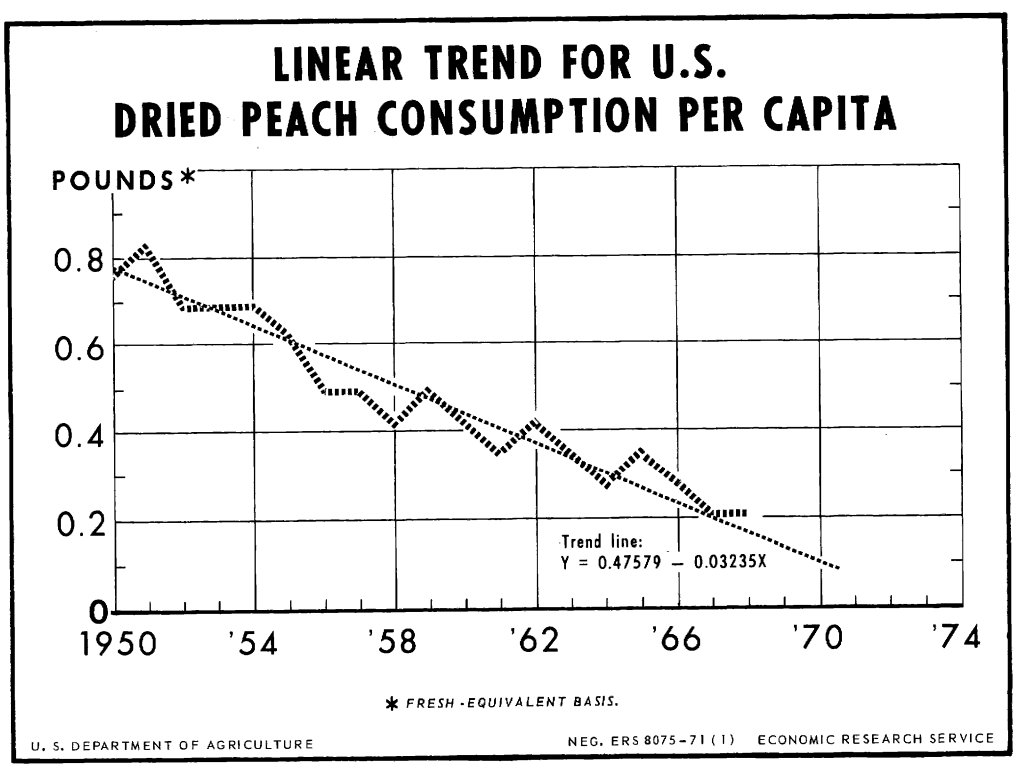

Figure 17

Table 16.--Projected U.S. per capita consumption of peaches, 1970-80

Year	Fresh	Processed				All peach forms
		Canned	Canned in fruit salad	Frozen	Dried	
	Pounds 1/					
1970	6.10	5.80	1.11	.41	.12	13.58
1971	5.90	5.86	1.12	.42	.09	13.43
1972	5.70	5.92	1.14	.43	.06	13.29
1973	5.50	5.98	1.16	.44	.02	13.15
1974	5.30	6.04	1.17	.45	-	13.00
1975	5.10	6.10	1.19	.46	-	12.86
1976	4.90	6.16	1.21	.47	-	12.71
1977	4.70	6.22	1.22	.48	-	12.57
1978	4.50	6.28	1.24	.49	-	12.43
1979	4.30	6.34	1.26	.50	-	12.28
1980	4.10	6.40	1.27	.51	-	12.14

1/ Fresh-equivalent basis.

Findings of the U.S. Department of Agriculture's Household Food Consumption Survey (29, 30, 31, 32, 33) provided data for projecting regional per capita consumption of canned peaches. Annual per capita consumption data were desired, but the only regional data available were those reported for 1955 and 1965 in the consumption surveys.

In projecting regional per capita consumption for 1970-80, an index method was used (table 17). The implicit assumption was that in the future each region's per capita consumption will remain a constant percentage of the U.S. average. For example, per capita consumption of canned peaches in the North Atlantic Region will remain 18 percent below the U.S. average, while that in the Western Region will remain 17 percent above the U.S. average.

To project regional per capita consumption of canned peaches for 1970, 1975, and 1980, the regional index (table 17) was applied to projected U.S. per capita consumption. Table 18 lists the projections.

The Household Food Consumption Survey also provided data for projecting regional per capita consumption of peaches canned in fruit salad. 6/ The projected regional per capita consumption of this product line is shown in table 19. Appendix A contains a complete explanation of the derivation of these regional estimates.

6/ Fruit salad is assumed to contain 40 percent peaches. FDA Standards of Identity for fruit cocktail (which represented 93 percent of the fruit salad pack in 1968) require 30-50 percent peaches.

Table 17.--Index of regional per capita consumption of canned peaches, 1965

Area	Per capita consumption of canned peaches	Index
	Pounds 1/	
United States	6.07 2/	100
North Atlantic Region	4.98	82
North Central Region	6.98	115
Southern Region	5.67	93
Western Region	7.11	117

1/ Fresh-equivalent basis.

2/ Differs from the estimate of 5.76 in table 18 since each comes from a different source--the former obtained from USDA's nationwide survey of household food consumption during April 1965-March 1966 (29) and the latter developed by ERS's Economic and Statistical Analysis Division (44). For the present study, the absolute values in table 18 are used, while the data in table 17 are used only in calculating a regional index.

Sources: (29) (30) (31) (32) (33).

Table 18.--U.S. and regional per capita consumption of canned peaches, 1965 and 1968, and projected 1970-80

Year	United States 1/	North Atlantic Region	North Central Region	Southern Region	Western Region
	Pounds 2/				
1965	5.76	4.72	6.62	5.36	6.74
1968	5.41	4.44	6.22	5.03	6.33
1970	5.80	4.76	6.67	5.39	6.79
1975	6.10	5.00	7.02	5.67	7.14
1980	6.40	5.25	7.36	5.95	7.49
Index 3/	100	82	115	93	117

1/ Values for 1965 and 1968 are actual U.S. per capita consumption values (44); all others are projections based on Y = 5.13684 + 0.06035X (where X = 0 at 1959).

2/ Fresh-equivalent basis.

3/ Source: Table 17.

Table 19.--U.S. and regional per capita consumption of all canned peaches, 1965 and 1968, and projected 1970-80

Year and peach product	United States 1/	North Atlantic Region	North Central Region	Southern Region	Western Region
	Pounds 2/				
1965:					
Canned	5.76	4.72	6.62	5.36	6.74
Canned in fruit salad	1.03	1.11	1.08	.74	1.34
All canned	6.79	5.83	7.70	6.10	8.08
1968:					
Canned	5.41	4.44	6.22	5.03	6.33
Canned in fruit salad	1.10	1.19	1.16	.79	1.43
All canned	6.51	5.63	7.38	5.82	7.76
1970:					
Canned	5.80	4.76	6.67	5.39	6.79
Canned in fruit salad	1.11	1.20	1.17	.80	1.44
All canned	6.91	5.96	7.84	6.19	8.23
1975:					
Canned	6.10	5.00	7.02	5.67	7.14
Canned in fruit salad	1.19	1.29	1.25	.86	1.55
All canned	7.29	6.29	8.27	6.53	8.69
1980:					
Canned	6.40	5.25	7.36	5.95	7.49
Canned in fruit salad	1.27	1.37	1.33	.91	1.65
All canned	7.67	6.62	8.69	6.86	9.14

1/ Values for 1965 and 1968 are actual U.S. per capita consumption values; all others are projections based on $Y = 5.13684 + 0.06035X$ for canned and $Y = 0.92632 + 0.01649X$ for canned in fruit salad. In both equations, $X = 0$ at 1959.

2/ Fresh-equivalent basis.

Regional per capita estimates (tables 18 and 19) in conjunction with regional population estimates and projections (app. table 11) provided the basis for the projections of total consumption of all canned peaches by geographical region (table 20).

Table 20.--Total consumption of all canned peaches by region, 1965 and 1968, and projected 1970-80

Year and region	Canned	Canned in fruit salad	All canned 1/
	Million pounds 2/		
1965:			
North Atlantic	223.7	52.6	276.3
North Central	358.8	58.5	417.3
Southern	322.6	44.5	367.1
Western	209.3	41.6	250.9
U.S. total 3/	1,114.4	197.3	1,311.6
1968:			
North Atlantic	215.0	57.6	272.6
North Central	345.8	64.5	410.3
Southern	313.7	49.3	362.9
Western	205.2	46.4	251.5
U.S. total 3/	1,079.7	217.7	1,297.4
1970:			
North Atlantic	238.1	60.0	298.1
North Central	374.4	65.7	440.1
Southern	347.6	51.6	399.2
Western	235.2	49.9	285.0
U.S. total 3/	1,195.3	227.2	1,422.5
1975:			
North Atlantic	266.1	68.6	334.7
North Central	417.2	74.3	491.5
Southern	396.6	60.2	456.7
Western	279.0	60.6	339.5
U.S. total 3/	1,358.8	263.6	1,622.5
1980:			
North Atlantic	299.1	78.0	377.1
North Central	468.9	84.7	553.7
Southern	453.1	69.3	522.4
Western	331.5	73.0	404.5
U.S. total 3/	1,552.6	305.1	1,857.7

1/ Detail may not add to total because of rounding.
2/ Fresh-equivalent basis.
3/ Excludes Alaska and Hawaii.

Deficit/Surplus Regions

Only the Western Region cans enough peaches to meet, and exceed, its consumption needs; its surplus is attributed to the large canning volume of California. California supplies the bulk of the Nation's canned peach and canned fruit salad requirements. The only other region that approaches satisfying its own needs is the South, providing 30 percent of the canned peaches consumed there in 1965 and 36 percent in 1968. Table 21 shows estimated deficits or surpluses in the four regions arrived at by comparing consumption of all canned peaches with production of peaches utilized for canning.

Table 21.--Deficit and surplus regions in the production and consumption of all canned peaches, 1965 and 1968, and projected 1970 1/

Year and region	Consumption of all canned peaches 2/	Peach production used for canning 3/	(Deficit) or surplus
	Million pounds 4/		
1965:			
North Atlantic	276.3	10.2	(266.1)
North Central	417.3	15.8	(401.5)
Southern	367.1	110.3	(256.8)
Western	250.9	1,511.9	1,261.0
1968:			
North Atlantic	272.6	9.7	(262.9)
North Central	410.3	5.5	(404.8)
Southern	362.9	132.2	(230.7)
Western	251.5	1,727.2	1,475.7
1970: 5/			
North Atlantic	298.1	9.7	(288.4)
North Central	440.1	5.5	(434.6)
Southern	399.2	132.2	(267.0)
Western	285.0	1,727.2	1,442.2

1/ "All canned peaches" equals canned peaches plus peaches canned in fruit salad.
2/ Source: Table 20.
3/ Sources: (26) (36) (40).
4/ Fresh-equivalent basis.
5/ 1970 production figures assume production for canning to be the same as in 1968.

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APPENDIX A.--SUPPLEMENTAL TABLES

Appendix table 1.--U.S. production of peaches, 1959-68

Crop year	Actual production	Economic abandonment	Excess cullage	Production having value	Home use	Farm sales (production)
	Million pounds					
1959	3,597.7	59.4	89.9	3,448.4	68.9	3,379.5
1960	3,583.3	14.6	110.8	3,457.9	68.1	3,389.8
1961	3,769.9	33.6	173.9	3,562.4	66.0	3,496.4
1962	3,611.3	20.5	203.8	3,387.0	53.1	3,333.9
1963	3,539.5	13.0	108.4	3,418.1	46.0	3,372.1
1964	3,452.6	7.7	168.6	3,276.3	41.2	3,235.1
1965	3,497.5	102.7	220.8	3,174.0	45.2	3,128.8
1966	3,404.5	2.3	192.2	3,210.0	41.3	3,168.7
1967	2,690.6	.4	162.9	2,527.3	34.0	2,493.3
1968	3,659.9	44.5	197.3	3,418.1	36.8	3,381.3

Sources: (25) (26) (36) (40).

Appendix table 2.--Peach production (farm sales), United States and selected States, 1950-68

Crop year	United States	California	South Carolina	Georgia
	Million pounds			
1950	2,162.7	1,297.5	15.1	36.0
1951	2,774.0	1,637.6	199.0	163.9
1952	2,753.5	1,387.5	162.7	104.3
1953	2,881.0	1,523.5	177.1	147.9
1954	2,784.5	1,413.5	168.0	133.9
1955	2,377.1	1,560.3	0	0
1956	3,076.6	1,720.3	203.6	71.8
1957	2,825.9	1,577.7	235.2	89.8
1958	3,235.7	1,500.1	254.4	207.1
1959	3,379.5	1,754.4	271.0	196.6
1960	3,389.8	1,718.4	274.0	219.9
1961	3,496.4	1,789.4	366.6	233.1
1962	3,333.9	1,925.6	322.8	184.1
1963	3,372.1	1,988.0	395.8	227.4
1964	3,235.1	2,239.6	58.1	68.3
1965	3,128.8	1,857.8	327.4	147.6
1966	3,168.7	2,022.2	333.8	169.5
1967	2,493.3	1,628.2	168.4	141.1
1968	3,381.3	2,032.6	395.0	229.5

Sources: 1950-58, (28) (43); 1959-68, (25) (26) (36) (40).

Appendix table 3.--Utilization of peach production, by region, 1959-68

Region and crop year	Farm sales (production)	Utilization				
		Fresh market	Processing market			
			Canning	Freezing	Drying	Other
	Million pounds					
North Atlantic: 1/						
1959	288.5	261.4	17.5	9.6	-	-
1960	319.7	291.6	20.5	7.6	-	-
1961	241.2	222.5	15.6	3.1	-	-
1962	265.1	248.6	8.8	7.7	-	-
1963	225.3	211.6	8.4	5.3	-	-
1964	263.1	240.4	15.4	7.2	-	.1
1965	248.7	230.0	10.2	8.5	-	-
1966	165.6	155.8	4.9	4.9	-	-
1967	94.5	91.0	2.3	1.2	-	-
1968	231.4	218.9	9.7	2.8	-	-
North Central: 2/						
1959	269.9	224.9	38.4	6.2	-	.4
1960	281.1	240.7	29.3	10.6	-	.5
1961	285.8	245.5	30.2	9.6	-	.5
1962	151.0	130.9	15.8	3.8	-	.5
1963	106.7	88.0	13.4	5.3	-	-
1964	212.1	183.9	19.1	8.6	-	.5
1965	168.5	145.2	15.8	7.2	-	.3
1966	101.3	89.9	8.0	3.4	-	-
1967	128.0	113.2	5.8	8.7	-	.3
1968	91.2	85.7	5.5	-	-	-
Southern: 3/						
1959	828.3	761.3	47.1	10.8	-	9.1
1960	907.8	799.6	90.3	11.0	-	6.9
1961	991.3	889.3	78.6	14.3	-	9.1
1962	810.3	717.4	67.8	15.6	-	9.5
1963	960.2	825.8	105.6	17.2	-	11.6
1964	373.4	344.0	11.4	9.8	-	8.2
1965	787.6	650.1	110.3	11.8	-	15.4
1966	780.5	675.5	82.1	11.9	-	11.0
1967	561.6	523.9	22.4	6.2	1.5	7.6
1968	942.0	779.6	132.2	16.2	-	14.0

See footnotes at end of table.

Continued--

Appendix table 3.--Utilization of peach production, by region, 1959-68--Con.

Region and crop year	Farm sales (production)	Utilization				
		Fresh market	Processing market			
			Canning	Freezing	Drying	Other
	Million pounds					
Western: 4/						
1959	1,992.8	405.3	1,423.9	50.0	112.4	1.2
1960	1,881.2	350.3	1,388.2	70.9	71.6	.2
1961	1,978.1	368.3	1,490.0	62.0	57.8	-
1962	2,107.5	378.2	1,594.9	52.0	82.4	-
1963	2,079.9	283.2	1,657.0	62.9	76.6	.2
1964	2,386.5	341.7	1,893.7	81.3	67.4	2.4
1965	1,924.0	286.4	1,511.9	55.1	70.6	-
1966	2,121.3	275.5	1,733.8	68.0	44.0	-
1967	1,709.2	206.7	1,382.9	80.8	24.0	14.8
1968	2,116.7	240.5	1,727.2	90.6	36.6	21.8
United States:						
1959	3,379.5	1,653.4	1,526.9	76.1	112.4	10.7
1960	3,389.8	1,682.2	1,528.3	100.1	71.6	7.6
1961	3,496.4	1,725.6	1,614.4	89.0	57.8	9.6
1962	3,333.9	1,475.1	1,687.3	79.1	82.4	10.0
1963	3,372.1	1,408.6	1,784.4	90.7	76.6	11.8
1964	3,235.1	1,110.0	1,939.6	106.9	67.4	11.2
1965	3,128.8	1,311.7	1,648.2	82.6	70.6	15.7
1966	3,168.7	1,196.7	1,828.8	88.2	44.0	11.0
1967	2,493.3	934.8	1,413.4	96.9	25.5	22.7
1968	3,381.3	1,324.7	1,874.6	109.6	36.6	35.8

1/ N.H., Mass., R.I., Conn., N.Y., N.J., and Pa.
2/ Ohio, Ind., Ill., Mich., Mo., and Kans.
3/ Del., Md., Va., W. Va., N.C., S.C., Ga., Ky., Tenn., Ala., Miss., Ark., La., Okla., and Tex.
4/ Calif., Idaho, Colo., Utah, Wash., and Oreg.

Sources: (25) (26) (36) (40).

Appendix table 4.--Utilization of peach production in selected States, 1959-68

Crop year	California 1/		South Carolina 2/		Georgia 3/		Pennsylvania 4/		Michigan 5/	
	Fresh	Processing	Fresh	Processing	Fresh	Processing	Fresh	Processing	Fresh	Processing
	Million pounds									
1959	230.4	1,525.2	257.6	13.4	166.5	30.1	105.6	23.0	121.5	44.6
1960	240.8	1,477.7	246.1	27.9	178.9	41.0	112.3	24.0	119.1	39.8
1961	229.2	1,560.3	336.5	30.1	187.7	45.4	97.7	15.3	121.5	39.8
1962	246.4	1,679.4	298.8	24.0	143.6	40.5	99.1	13.7	52.4	19.7
1963	218.4	1,769.8	335.8	60.0	178.1	49.3	78.7	10.6	73.0	18.7
1964	241.0	1,998.8	57.1	1.0	62.6	5.7	88.6	19.4	88.6	27.4
1965	221.6	1,636.3	267.4	60.0	91.9	55.7	85.6	16.6	93.1	23.0
1966	208.6	1,813.6	281.0	52.8	133.6	35.9	52.6	7.9	36.5	11.0
1967	144.2	1,484.0	159.5	8.9	119.4	21.7	34.5	2.5	53.6	13.9
1968	167.8	1,864.8	320.0	75.0	163.8	65.7	93.6	10.6	6/	6/

1/ Sources: (25) (26) (36) (40).
2/ Sources: (25) (26) (36) (40) and unpublished data supplied by Crop Reporting Board, Columbia, S.C.
3/ Sources: (23) (25) (26) (36) (40) and unpublished data supplied by Crop Reporting Service, Athens, Ga.
4/ Source: (20)
5/ Sources: (25) (26) (36) (40) (15).
6/ Not published to avoid disclosing individual operations.

Appendix table 5.--Index of relative changes in prices, all farm products and peaches, United States, 1959-68

Year	All farm products	Peaches
1957-59	100	100
1960	99	93
1961	99	96
1962	101	94
1963	100	105
1964	98	111
1965	103	110
1966	110	128
1967	105	154
1968	108	132

Sources: (37) (28) (43) (2).

Appendix table 6.--All peaches: Season average price received by growers, selected States, 1959-68

Crop year	All peaches, U.S.	Cling-stone, Calif.	Freestone					
			Calif.	S.C.	Ga.	Pa.	N.J.	Mich.
	Cents per pound							
1959	3.97	2.96	3.13	5.52	5.00	4.38	6.98	3.75
1960	3.84	2.79	3.17	4.22	4.92	4.48	6.34	4.21
1961	3.95	3.38	3.19	3.97	4.44	4.88	7.90	3.88
1962	3.87	3.21	3.23	4.01	4.60	4.58	6.91	4.58
1963	4.35	3.58	3.65	4.96	4.97	5.69	8.30	5.37
1964	4.59	3.79	3.98	9.64	10.20	5.69	7.00	4.19
1965	4.54	4.19	3.60	4.50	4.43	5.50	7.50	4.80
1966	5.27	4.21	4.75	6.82	5.67	7.77	9.40	7.94
1967	6.36	4.88	5.66	9.40	8.18	10.30	12.20	9.67
1968	5.44	4.62	5.61	4.70	5.72	6.60	8.20	8.40
1959-68 average	4.62	3.76	4.00	5.77	5.81	5.99	8.07	5.68

Sources: (27) (41).

Appendix table 7.--Peaches for fresh consumption: Season average price "as sold," selected States, 1959-68 1/

Crop year	Cling-stone, Calif.	All peaches		Freestone				
		Calif.	U.S.	Calif.	S.C.	Ga.	Pa.	Mich.
	Cents per pound							
1959	5.04	4.52	5.20	4.50	5.63	5.41	4.69	4.27
1960	4.02	4.60	5.06	4.63	4.40	5.51	4.79	4.59
1961	4.12	4.76	4.87	4.77	4.14	4.90	5.21	4.29
1962	3.99	5.47	4.33	4.56	4.14	5.10	4.79	5.10
1963	4.16	4.61	5.62	4.62	5.38	5.60	5.94	5.72
1964	4.67	5.20	6.34	5.22	9.82	10.80	6.03	4.53
1965	5.14	4.97	5.60	4.97	4.90	5.58	5.82	5.15
1966	7.46	6.87	7.41	6.86	7.49	6.50	8.33	9.02
1967	7.10	7.89	8.96	7.90	9.72	9.10	10.60	10.50
1968	6.90	7.59	6.35	7.60	5.00	6.69	6.90	9.00
1959-68 average	5.26	5.65	5.97	5.56	6.06	6.52	6.31	6.22

1/ "As sold" refers to the average prices farmers received for their products on a local market basis at the point of first sale.

Sources: (27) (41).

Appendix table 8.--Peaches, all processing except dried: Season average equivalent processing-plant-door returns received by growers, selected States, 1959-68

Crop year	All peaches, Calif.	Cling-stone, Calif.	Freestone					
			U.S.	Calif.	S.C.	Ga.	Pa.	Mich.
	Cents per pound							
1959	2.79	2.94	2.35	2.25	2.60	2.51	2.68	2.60
1960	2.66	2.80	2.36	2.13	2.60	2.51	3.00	3.00
1961	3.10	3.38	2.23	2.08	2.35	2.40	2.78	2.63
1962	3.00	3.21	2.22	2.09	2.32	2.61	2.85	3.02
1963	3.47	3.59	2.94	2.96	2.70	2.55	3.62	3.90
1964	3.70	3.80	3.21	3.24	4.17	1.96	3.67	2.85
1965	3.93	4.19	2.82	2.81	2.92	2.59	3.22	3.30
1966	4.07	4.20	3.33	3.38	3.21	2.59	4.04	4.30
1967	4.83	4.88	4.54	4.56	3.76	3.13	6.45	6.55
1968	4.65	4.62	4.37	4.78	3.60	3.29	3.94	1/
1959-68 average	3.62	3.76	3.04	3.03	3.02	2.61	3.63	3.57

1/ Not published to avoid disclosing individual operations.

Sources: (27) (41).

Appendix table 9.--Components of demand for peaches, 1966-68

Year	U.S. farm sales 1/	Domestic civilian consumption 2/	Exports 3/	Government purchases 4/
	Million pounds 5/			
1966	3,168.7	2,615.9	296.0	77.9
1967	2,493.3	2,269.8	149.0	63.7
1968	3,381.3	2,726.7	177.0	64.0

1/ Source: (43).
2/ U.S. civilian population (appendix table 10) times U.S. per capita consumption data reported in (44).
3/ Sources: (43) (46).
4/ Sources: (13) (14).
5/ Fresh-equivalent basis.

Appendix table 10.--U.S. peach production per capita, 1950-68

Crop year	Peach production (farm sales)	U.S. civilian resident population	Per capita production
	Million pounds	Thousands	Pounds
1950	2,162.7	150,790	14.3
1951	2,774.0	151,559	18.3
1952	2,753.5	153,892	17.9
1953	2,881.0	156,595	18.4
1954	2,784.5	159,695	17.4
1955	2,377.1	162,967	14.6
1956	3,076.6	166,055	18.5
1957	2,825.9	169,110	16.7
1958	3,235.7	172,226	18.8
1959	3,379.5	175,277	19.3
1960	3,389.8	178,153	19.0
1961	3,496.4	181,207	19.3
1962	3,333.9	183,796	18.1
1963	3,372.1	186,667	18.1
1964	3,235.1	189,372	17.1
1965	3,128.8	191,894	16.3
1966	3,168.7	193,767	16.4
1967	2,493.3	195,671	12.7
1968	3,381.3	197,584	17.1

Sources: (28) (43) (49).

Appendix table 11.--Total resident population of regions, estimated 1965, 1968, and 1969, and projected 1970-80

Year (as of July 1)	North Atlantic Region	North Central Region	Southern Region	Western Region
	Thousands			
1965	47,391	54,195	60,186	31,054
1968	48,423	55,598	62,358	32,414
1969	48,784	56,080	63,086	32,898
1970	50,025	56,136	64,490	34,632
1975	53,217	59,430	69,942	39,070
1980	56,966	63,716	76,149	44,255

Sources: (47) (50).

APPENDIX B.--CONSUMPTION OF PEACHES CANNED IN FRUIT SALAD

The quantity of peaches used for canned fruit salad has shown an upward trend since 1953. Per capita consumption values for both fruit salad and the peaches portion of fruit salad are shown below.

The Household Food Consumption Survey (29, 30, 31, 32, 33) provided regional estimates of per capita consumption of fruit salad (from which estimates of the peaches segment were derived). These estimates by region provided the base for an indexing method (app. table 13) used in projecting regional per capita consumption of peaches canned in fruit salad for 1970-80 (app. table 14).

Appendix table 12.--U.S. per capita consumption of peaches canned in fruit salad, 1950-68

Year	U.S. per capita consumption of fruit salad	Peaches segment 1/
	Pounds 2/	
1950	2.3	0.9
1951	1.8	0.7
1952	2.1	0.9
1953	1.9	0.7
1954	1.9	0.7
1955	2.1	0.9
1956	2.3	0.9
1957	2.3	0.9
1958	2.3	0.9
1959	2.4	1.0
1960	2.4	1.0
1961	2.4	1.0
1962	2.5	1.0
1963	2.5	1.0
1964	2.3	0.9
1965	2.6	1.0
1966	2.7	1.1
1967	2.4	1.0
1968	2.8	1.1

1/ Fruit salad is assumed to contain 40 percent peaches. FDA Standards of Identity for fruit cocktail (which represented 93 percent of the fruit salad pack in 1968) require 30-50 percent peaches.

2/ Fresh-equivalent basis.

Sources: (34) (44).

Appendix table 13.--Index of regional per capita consumption of peaches canned in fruit salad, 1965

Area	Per capita consumption of peaches canned in fruit salad	Index
	Pounds 1/	
United States	1.41	100
North Atlantic Region	1.52	108
North Central Region	1.48	105
Southern Region	1.01	72
Western Region	1.83	130

1/ Fresh-equivalent basis.

Sources: (29) (30) (31) (32) (33).

Appendix table 14.--U.S. and regional per capita consumption of peaches canned in fruit salad, 1965 and 1968, and projected 1970-80

Year	United States 1/	North Atlantic Region	North Central Region	Southern Region	Western Region
	Pounds 2/				
1965	1.03	1.11	1.08	.74	1.34
1968	1.10	1.19	1.16	.79	1.43
1970	1.11	1.20	1.17	.80	1.44
1975	1.19	1.29	1.25	.86	1.55
1980	1.27	1.37	1.33	.91	1.65
Index 3/	100	108	105	72	130

1/ Values for 1965 and 1968 are actual U.S. per capita consumption values; all others are projections based on Y = 0.92632 + 0.01649X (where X = 0 at 1959).

2/ Fresh-equivalent basis.

3/ Source: App. table 13.

APPENDIX C.--CONVERSION FACTORS

To convert bushels of peaches to pounds, 48 pounds to the bushel was used. Conversion Factors and Weights and Measures for Agricultural Commodities (21) gives the weight as 46-52 pounds. The factor of 48 was chosen because Agricultural Statistics (28) had used it and because 48 represents neither extreme.

The following factors for peaches were used for converting to farm weight: 0.873 from canned weight, 1.25 from frozen weight, and 6.94 from dried weight (21).

Appendix tables 15 and 16 show all other factors used in this report.

Appendix table 15.--Selected canned fruits: Net weight of standard cases

Commodity	24/303's	24/2's	24/2-1/2's	6/10's
	Pounds per case			
Peaches	24.6	30.0	43.5	40.0
Fruits for salad	25.5	31.0	45.0	41.4
Fruit cocktail	25.5	31.0	45.0	41.4

Source: (21).

Appendix table 16.--Factors relating to farm and processed weights of selected canned fruits

Commodity	Pounds farm weight					Pounds canned from pounds farm weight	Cases 24/2-1/2 from pounds canned
	From pounds canned	From cases 24/2-1/2's	From cases 24/303's	From cases 24/2's	From cases 6/10's		
All peaches 1/....	0.873	37.98	21.48	26.20	34.93	1.153	0.02299
Clingstone.....	0.836	36.36	20.56	25.08	33.44	1.196	0.02299
Freestone.....	1.022	44.44	25.14	30.66	40.88	0.979	0.02299
Fruits for salad..	0.889	40.00	22.66	27.55	36.80	1.125	0.02222
Fruit cocktail....	0.889	40.00	22.66	27.55	36.80	1.125	0.02222

1/ Factors for "All peaches" represent a weighted average of clingstone and freestone factors, where clingstones were assigned 80 percent and freestones 20 percent. Since California produces approximately 90 percent of the U.S. canned peach pack and since about 90 percent of California's peach production is made up of clings, the assumption was made that 80 percent of the U.S. canned peaches are clings and 20 percent are freestones.

Source: (21).